LyondellBasell

2023 Investor Handbook

Cautionary statement

The statements in this report relating to matters that are not historical facts are forward-looking statements. These forward-looking statements are based upon assumptions of management of LyondellBasell which are believed to be reasonable at the time made and are subject to significant risks and uncertainties. When used in this report, the words "estimate," "believe," "continue," "could," "intend," "may," "plan," "potential," "predict," "should," "will," "expect," and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain such identifying words. Actual results could differ materially based on factors including, but not limited to, market conditions, the business cyclicality of the chemical, polymers and refining industries; the availability, cost and price volatility of raw materials and utilities, particularly the cost of oil, natural gas, and associated natural gas liquids; our ability to successfully implement initiatives identified pursuant to our Value Enhancement Program and generate anticipated earnings; competitive product and pricing pressures; labor conditions; our ability to attract and retain key personnel; operating interruptions (including leaks, explosions, fires, weather-related incidents, mechanical failure, unscheduled downtime, supplier disruptions, labor shortages, strikes, work stoppages or other labor difficulties, transportation interruptions, spills and releases and other environmental risks); the supply/demand balances for our and our joint ventures' products, and the related effects of industry production capacities and operating rates; our ability to manage costs; future financial and operating results; benefits and synergies of any proposed transactions; receipt of required regulatory approvals and the satisfaction of closing conditions for our proposed transactions; final investment decision and the construction and operation of any proposed facilities described; our ability to align our assets and expand our core; legal and environmental proceedings; tax rulings, consequences or proceedings; technological developments, and our ability to develop new products and process technologies; our ability to meet our sustainability goals, including the ability to operate safely, increase production of recycled and renewable-based polymers to meet our targets and forecasts, and reduce our emissions and achieve net zero emissions by the time set in our goals; our ability to procure energy from renewable sources; our ability to build a profitable Circular & Low Carbon Solutions business; the continued operation of and successful shut down and closure of the Houston Refinery, including within the expected timeframe; potential governmental regulatory actions; political unrest and terrorist acts; risks and uncertainties posed by international operations, including foreign currency fluctuations; and our ability to comply with debt covenants and to repay our debt. Additional factors that could cause results to differ materially from those described in the forward-looking statements can be found in the "Risk Factors" section of our Form 10-K for the year ended December 31, 2023, which can be found at www.LyondellBasell.com on the Investor Relations page and on the Securities and Exchange Commission's website at www.sec.gov. There is no assurance that any of the actions, events or results of the forward-looking statements will occur, or if any of them do, what impact they will have on our results of operations or financial condition. Forward-looking statements speak only as of the date they were made and are based on the estimates and opinions of management of LyondellBasell at the time the statements are made. LyondellBasell does not assume any obligation to update forward-looking statements should circumstances or management's estimates or opinions change, except as required by law.

This report contains time sensitive information that is accurate only as of the date hereof. Information contained in this report is unaudited and is subject to change. We undertake no obligation to update the information presented herein except as required by law.

See APPENDIX for a discussion of the Company's use of non-GAAP financial measures.

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LyondellBasell

Advancing our strategy

Grow and upgrade the core

Shaping our portfolio to leverage strengths, support growth, increase resiliency and drive higher returns.

Build a profitable Circular & Low Carbon Solutions business

Building a leading CLCS business at scale to meet current and growing future demand for sustainable solutions.

Step up performance and culture

Unlocking significant opportunities across the portfolio by reshaping culture to focus on continuous value creation.

LyondellBasell

Circular & Low Carbon Solutions

Build a profitable Circular & Low Carbon Solutions business

The LYB integrated hub model is building scale, reducing cost and capturing value to establish leadership in circular solutions

Integrated Hub Concept

- Regional hubs to access and supply feedstock into integrated hubs
- Preferred strategic partner to feedstock owners
- Leveraging existing capabilities at Cologne and Houston sites
- Differentiated and advantaged technologies (e.g., *MoReTec*)
- Collaborating with brand owners to provide a range of optimal solutions via *Circulen* brands

Plastic waste sourcing

- Cyclyx (U.S.) – Oct-23
- Source One (EU) – Dec-23

Advanced waste sorting

- Cyclyx (U.S.) – Oct-23
- Source One (EU) – Dec-23

Mechanical recycling

- Mepol (EU) – Mar-23
- QCP (EU) – Apr-23[1]
- De Paauw (EU) – Oct-23
- Jurupa Valley (U.S.) – Feb-24[2]
- APK (EU) – Oct-24[3]

Third-party renewable off-takes (U.S., EU)

Advanced recycling

- Third-party pyrolysis oil off-takes (U.S., EU)
- *MoReTec* pilot plant running in Ferrara (EU) – Sep-20
- *MoReTec*-1 50 KTA (EU) FID Nov-23
- *MoReTec*-2 100 KTA (U.S.) FID 2026

Purification

- Potential reuse of Houston hydrotreaters FID ~2025

Cracking & polymerization

- LYB crackers (Cologne, Houston) and polymer sites

Compounding

- APS sites (U.S., EU)
- Mepol (EU) – Mar-23

circulen recover By LyondellBasell — Direct to customer

circulen renew By LyondellBasell — Direct to customer

circulen revive By LyondellBasell

Key

LYB joint venture

LYB acquisition

Existing LYB asset / contract / sales channel

LYB proprietary technology under development

Notes:

1. Date of increase of LYB share in QCP to 100%
2. Date of acquisition of Jurupa Valley Mechanical Recycling assets from PreZero in California (U.S.) announced
3. Solvent-based recycling. LYB announced acquisition of a minority stake in Feb-23, and increased share to 100% of APK in Oct-24

LyondellBasell

Build a profitable Circular & Low Carbon Solutions business

MoReTec: A differentiated advanced catalytic recycling technology

LYB has innovation capabilities and integrated assets to accelerate the commercial scalability of the *MoReTec* process

Leveraging our unique innovation capabilities

- Integrated R&D team rapidly developed the *MoReTec* process from concept to pilot scale to address the urgent need for scalable circular solutions that do not exist today

Utilizing our integrated hub model

- *MoReTec*-1 to be built at our Wesseling site near Cologne, Germany with benefits for plastic waste sourcing, carbon yield and energy integration
- *MoReTec*-2[1] planned for Houston hub and expected to be double the size of *MoReTec*-1

Potential licensing opportunities

- Technology drives value and global growth for LYB through partnerships

The LYB *MoReTec* advanced recycling semi-industrial pilot plant began operating in Ferrara, Italy in 2020

2018	2020	2022	2023	2026	2026+
LYB makes decision to develop advanced recycling technology	Semi-industrial pilot plant started in Ferrara, Italy	Preliminary engineering for commercial-scale *MoReTec*	Final investment decision for *MoReTec*-1	Expected startup of 50 KTA *MoReTec*-1 unit	*MoReTec*-2[1] (~100 KTA) and additional commercial-scale *MoReTec* units

1. Subject to final investment decision

LyondellBasell

Everyday sustainability

Industry-leading sustainability goals

Ending plastic waste

2MMt+

of recycled and renewable-based polymers will be produced and marketed annually by 2030[1]

for every $

we invest in venture funds that address the plastic waste challenge, we help catalyze another five dollars from co-investors

zero

plastic pellet loss to the environment from our facilities

Taking climate action

net zero

greenhouse gas emissions from operations by 2050[2]

42%

absolute scope 1 and 2 greenhouse gas emissions reduction from operations by 2030[3]

30%

absolute scope 3 greenhouse gas emissions reduction by 2030[3]

50%

minimum of electricity procured from renewable sources by 2030[4]

Supporting a thriving society

zero

incidents, injuries and accidents

achieve

gender parity in senior leadership globally by 2032

increase

the number of people from underrepresented groups in U.S. senior leadership roles to reflect the general population ratio by 2032

assess

a minimum of 70% of our key suppliers globally using sustainability criteria by 2025

1. Million metric tons. Production and marketing includes: (i) joint venture production marketed by LYB plus our pro rata share of the remaining production produced and marketed by the joint venture, and (ii) production via third-party tolling arrangements.
2. Our 2050 net zero goal includes scope 1 and 2 emissions.
3. Relative to 2020 baseline.
4. Based on 2020 procured levels.

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LyondellBasell

Value Enhancement Program

Targeting up to $1 B in recurring annual EBITDA by year end 2025 through a true culture shift and way of working at LYB.

Comprehensive approach to investment decisions and value creation

Economic value is being driven through:

- **A more agile and entrepreneurial culture**
- **Engaging the entire workforce**
- **Unlocking value while maintaining cost discipline**
- **Value generation with customers**

2023 Examples

Manufacturing & Operational Excellence	Procurement & Supply Chain	Commercial Excellence
Automation of Lake Charles Water Treatment Unit • Improved control system to minimize manual operations and reduce water consumption • Implementation cost ~$5,000 • ~$0.8 MM estimated recurring annual EBITDA	**Partnered with terminal provider to improve oxyfuels vessel loading** • Improved vapor recovery system to double loading rate, lower demurrage costs and reduce emissions • Implementation cost ~$0 • ~$1.0 MM estimated recurring annual EBITDA	**Capturing differential value through improved customer focus** • Invested engineering, marketing and technical service resources to launch new, high-performance wire and cable sheathing polymers serving high-value subsea infrastructure markets • Implementation cost ~$135,000 • ~$0.3 MM estimated recurring annual EBITDA

$150 MM
Recurring annual EBITDA by year end 2023
Original target 2023

$400 MM+
Recurring annual EBITDA by year end 2023
Unlocked value 2023

$600 MM
Recurring annual EBITDA by year end 2024
Target 2024

Up to $1 B
Recurring annual EBITDA by year end 2025
Target 2025

Notes: Year-end EBITDA run rate based on 2017-2019 mid-cycle margins and modest inflation relative to 2021 baseline. One-time CAPEX/OPEX costs to achieve estimated at $200 MM in 2023 and $325 MM in 2024. Estimated recurring annual EBITDA for individual projects cannot be reconciled to net income due to the inherent difficulty in quantifying certain amounts that are necessary for such reconciliation at the project level, including adjustments that could be made for provision for (benefit from) income taxes and depreciation & amortization, the amounts of which, based on historical experience, could be significant.

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Global presence

20

Countries with LYB manufacturing sites and joint ventures

~20,000

LYB employees globally

> 100

Countries with LYB sales

Note: Information as of December 31, 2023.

LyondellBasell

Global leader

$6 trillion

Chemical industry global revenues

LYB ranks

#1	#2	#3
Globally • Oxyfuels • PP compounds • Polyolefin licensing **Europe** • Polyethylene • Polypropylene	**Globally** • Polypropylene • Propylene oxide **North America** • Propylene • Styrene	**Globally** • Polyethylene + Polypropylene **North America** • Ethylene • Polyethylene • Acetic acid

$41 billion

LYB revenues in 2023

Sources: LyondellBasell, CMA and Cefic.

Notes: Product rankings are as of December 31, 2023. Includes all wholly-owned capacity and LyondellBasell's proportional share of joint venture capacities. Global chemical industry revenues for 2022 per Cefic Facts and Figures 2023.

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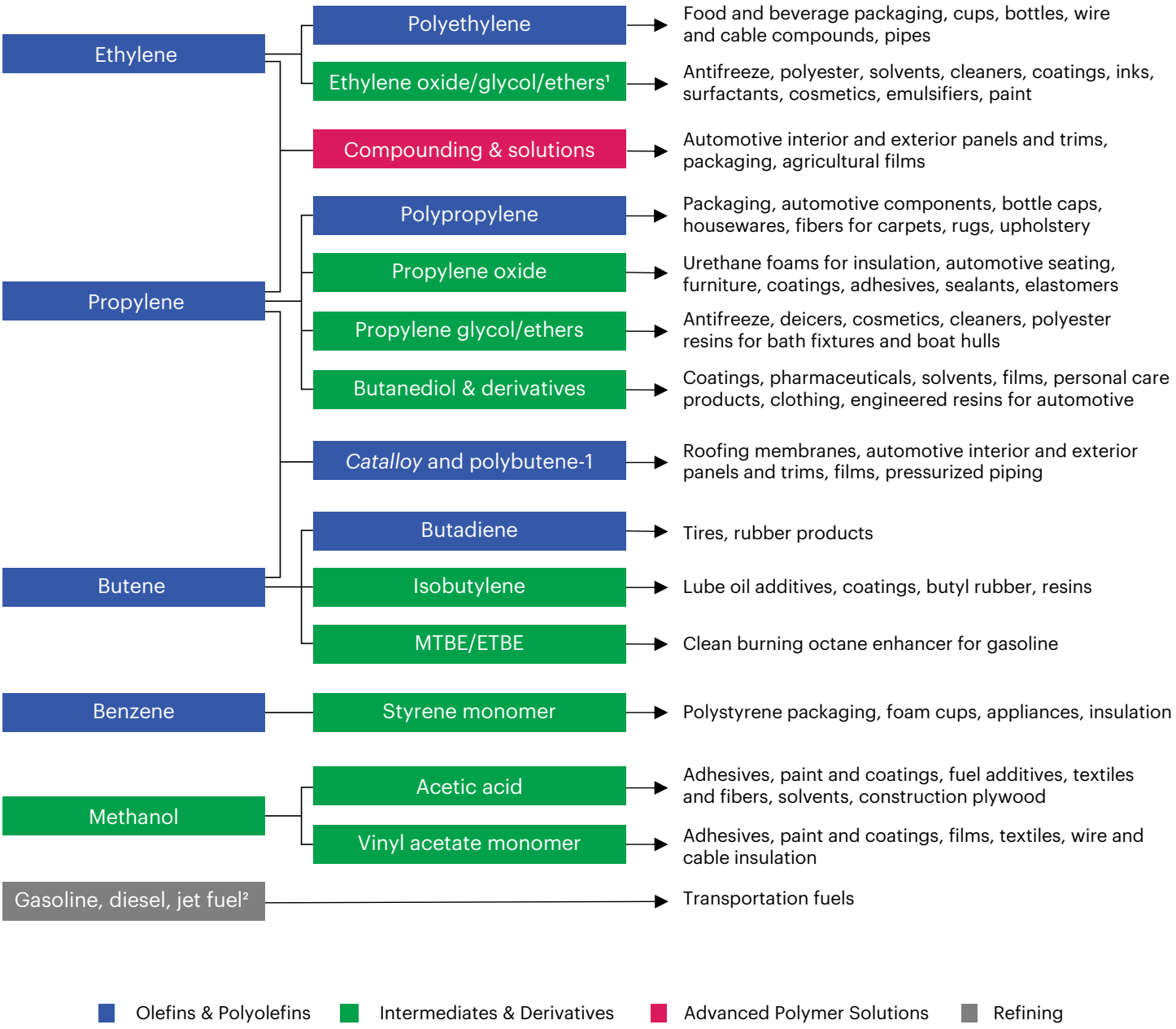
Product market

LYB products serve diverse markets. From fresh food packaging, clean fuels and durable textiles to medical applications, construction materials and automotive parts, LYB materials help improve the lives of people around the world.



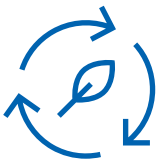
1. As of May 1, 2024, LYB completed the sale of Ethylene Oxide & Derivatives (EO&D) business to INEOS.
2. LYB will exit the refining business no later than the end of the first quarter 2025.

LyondellBasell

Why invest in LYB?

Global leadership in key markets

LYB's leading market positions in multiple geographies and value chains provide a strong foundation for sustainable growth and value creation.



Commitment to sustainability and innovation

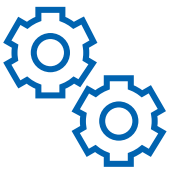
As a pioneer in circular and low-carbon solutions, LyondellBasell is at the forefront of the global transition to a more sustainable future. Our innovative technologies are central to our strategy of reducing our carbon footprint and capturing profitable market opportunities.

Robust financial performance

LYB has a proven track record of delivering strong financial results through operational excellence, disciplined capital allocation and growth. Our resilient cash generation enables us to provide returns to shareholders through dividends and share repurchases while ensuring reliable operations and prudently investing in value creation.

Strategic growth initiatives

LyondellBasell targets opportunities to leverage our proprietary technologies in growing markets with cost-advantaged raw materials, including sustainable and circular solutions. Our highly selective approach to growth is sharply focused on enhancing attractive positions in our core markets and technologies.



Resilient and diversified business model

Our integrated business portfolio provides stability and resilience through economic cycles. With operations spanning the globe, LyondellBasell benefits from product and market diversification, providing a balanced approach to risk and opportunity.

Focused on shareholder returns

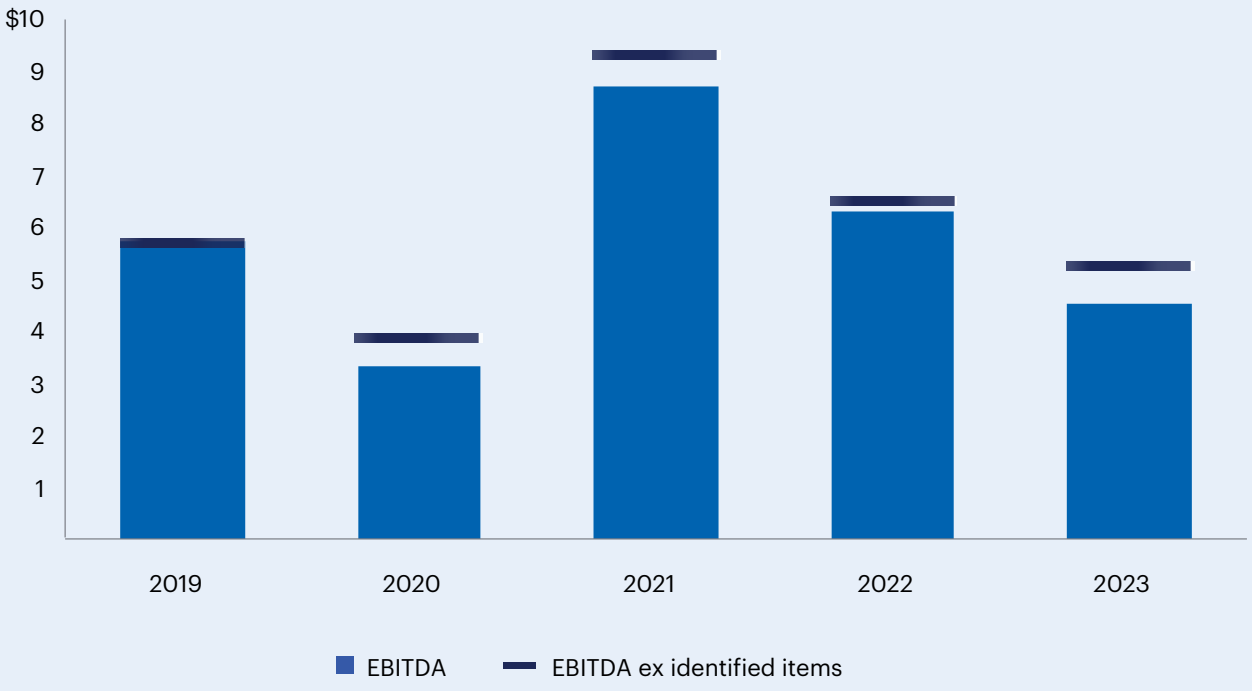
LyondellBasell's capital allocation strategy prioritizes the return of capital through a strong and sustainable dividend while investing in reliable operations and disciplined growth supported by an investment-grade balance sheet. We are committed to delivering superior long-term value for our investors.

2023 performance snapshot

$2.1 B	$6.46	$4.5 B
Net income	Diluted EPS	EBITDA
$2.8 B	$8.65	$5.2 B
Net income excluding identified items	Diluted EPS excluding identified items	EBITDA excluding identified items

EBITDA ex. identified items

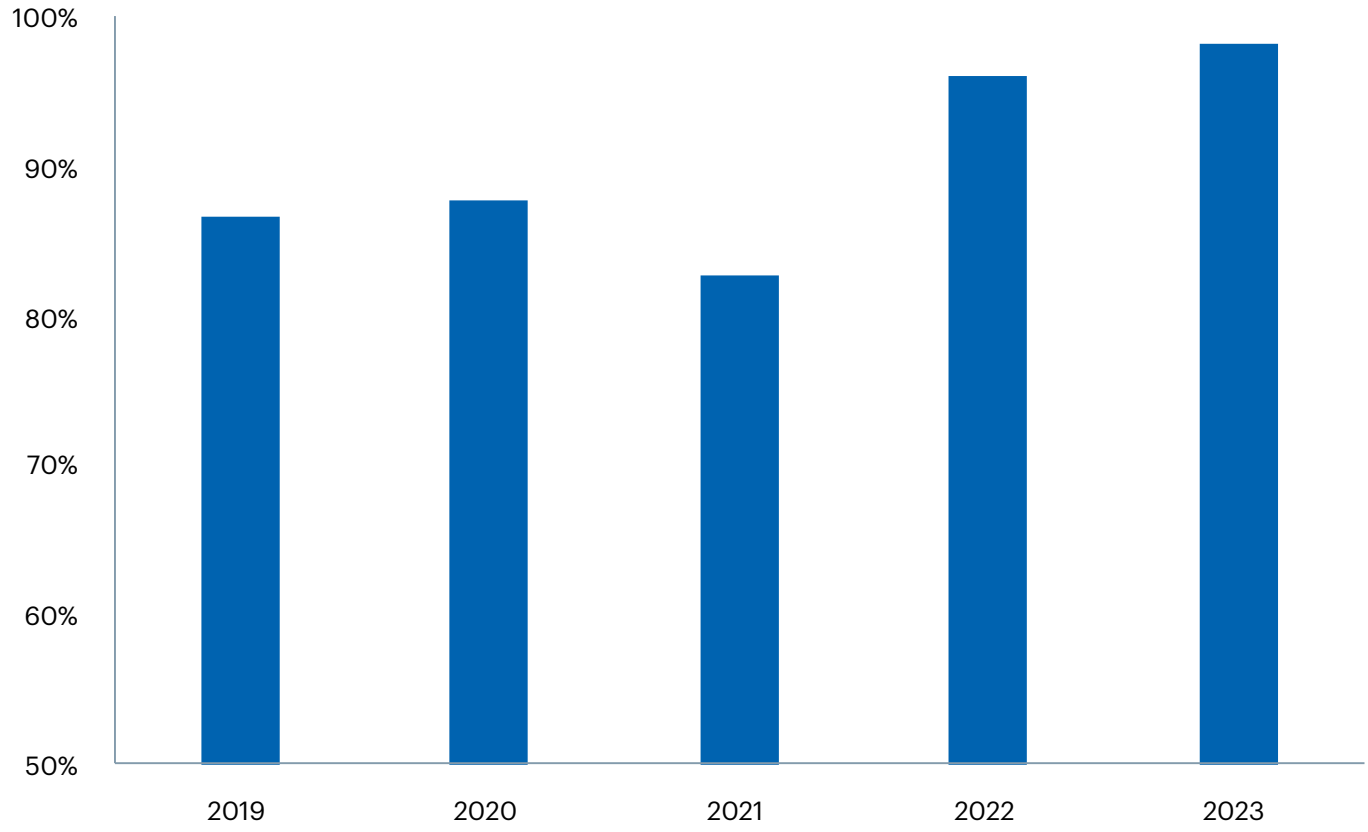
USD, billions



Note: Identified items include adjustments for lower of cost or market ("LCM"), impairments and refinery exit costs.

Robust cash conversion

Cash conversion



98%

Cash conversion
2023

$4.9 B

Cash from operating activities
2023

$3.4 B

Free cash flow
2023

Notes:
Cash conversion equals net cash provided by operating activities divided by EBITDA excluding LCM and impairment.
Free cash flow equals net cash provided by operating activities minus capital expenditures.

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Steady track record of dividend growth

5.2%

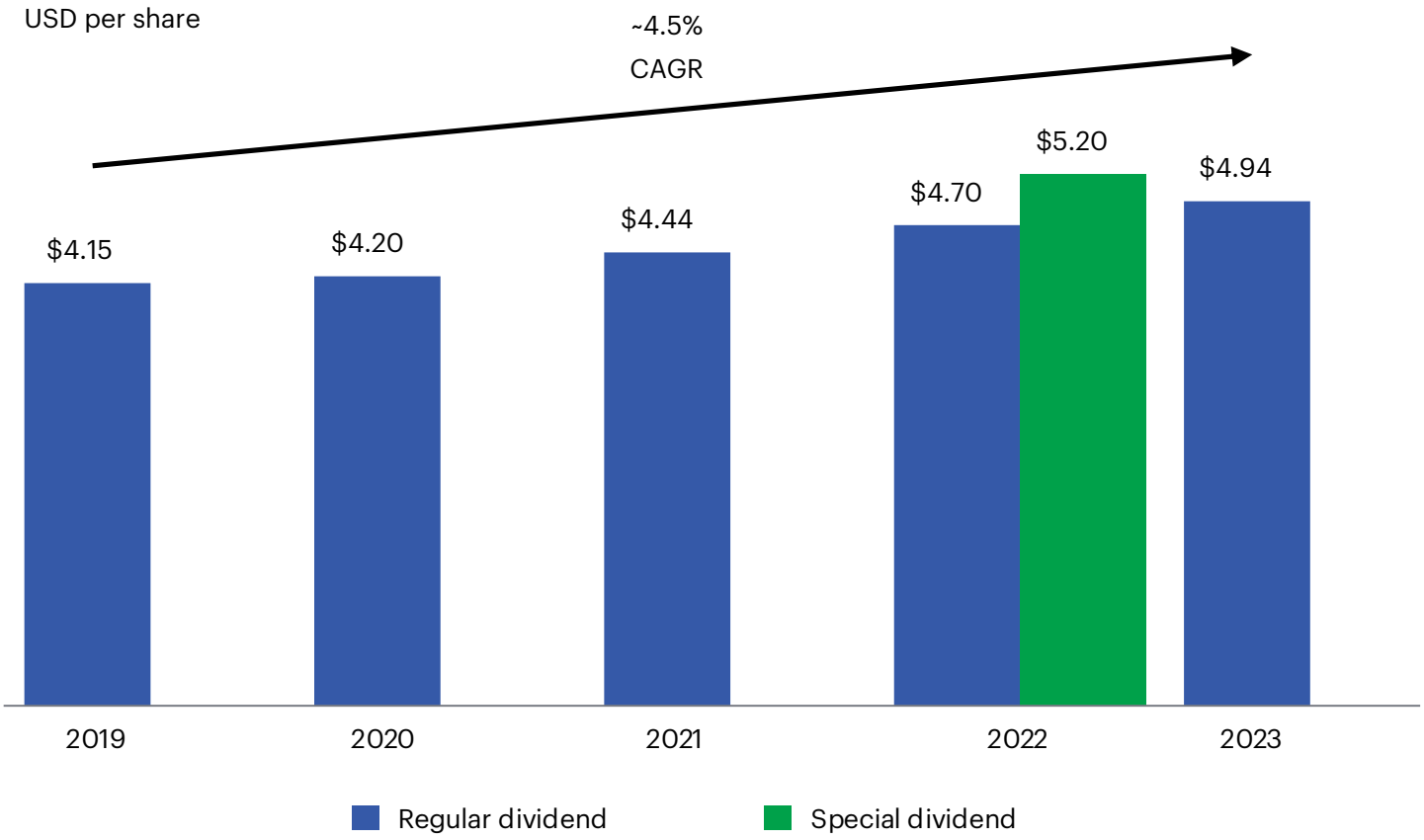
Dividend yield
2023

$1.6 B

Dividends paid
2023

Dividend

USD per share



Notes:
Dividend yield is calculated as the ratio of dividends per ordinary share to closing share price.
CAGR – Compound Annual Growth Rate

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LyondellBasell

LYB business segments

Olefins & Polyolefins – Americas

Our Olefins & Polyolefins – Americas segment produces and markets olefins & co-products, polyethylene and polypropylene. We are the second largest producer of propylene and combined polyethylene and polypropylene and the third largest ethylene producer in North America.

Selected Products

- Olefins & co-products
- Polyethylene
- Polypropylene
- *Catalloy* and polybutene-1

Major Markets

Packaging, automotive, films, pipes, textiles, roofing, appliances

Olefins & Polyolefins – Europe, Asia, International (EAI)

Our Olefins & Polyolefins – EAI segment produces and markets olefins & co-products, polyethylene and polypropylene. In Europe, we are the largest producer of both polyethylene and polypropylene.

Selected Products

- Olefins & co-products
- Polyethylene
- Polypropylene
- *Catalloy* and polybutene-1

Major Markets

Packaging, automotive, films, pipes, textiles, roofing, appliances

Intermediates & Derivatives (I&D)

Our I&D segment produces and markets propylene oxide and its derivatives, oxyfuels and related products and intermediate chemicals such as styrene monomer, acetyls and ethylene oxide and derivatives. We are the largest oxyfuels producer and the second largest producer of propylene oxide in the world.

Selected Products

- Propylene oxide & derivatives
- Intermediate chemicals
- Oxyfuels & related products

Major Markets

Insulation, home furnishings, coatings, adhesives, automotive, fuel additives

LyondellBasell

LYB business segments

Advanced Polymer Solutions

Our Advanced Polymers Solutions segment produces and markets polypropylene compounds, engineered plastics, masterbatches, engineered composites, colors and powders.

Selected Products

- Compounding & solutions

Major Markets

Automotive, packaging, films

Refining

Our Houston Refinery converts heavy high-sulfur crude oil into refined products including ultra-low sulfur diesel, Tier III gasoline and jet fuel. LYB will exit the refining business no later than the end of the first quarter 2025. Our significant hydrotreating capacity has the potential to produce renewable distillate and other bio-based feedstocks for our olefins crackers.

Selected Products

- Diesel, gasoline, jet fuel

Major Markets

Transportation fuels, chemical feedstocks

Technology

Our Technology segment develops and licenses chemical and polyolefin process technologies and manufactures and sells polyolefin catalysts. More than 350 polyolefin lines around the world utilize LyondellBasell-licensed technology representing more than 80 million tons of annual production capacity.

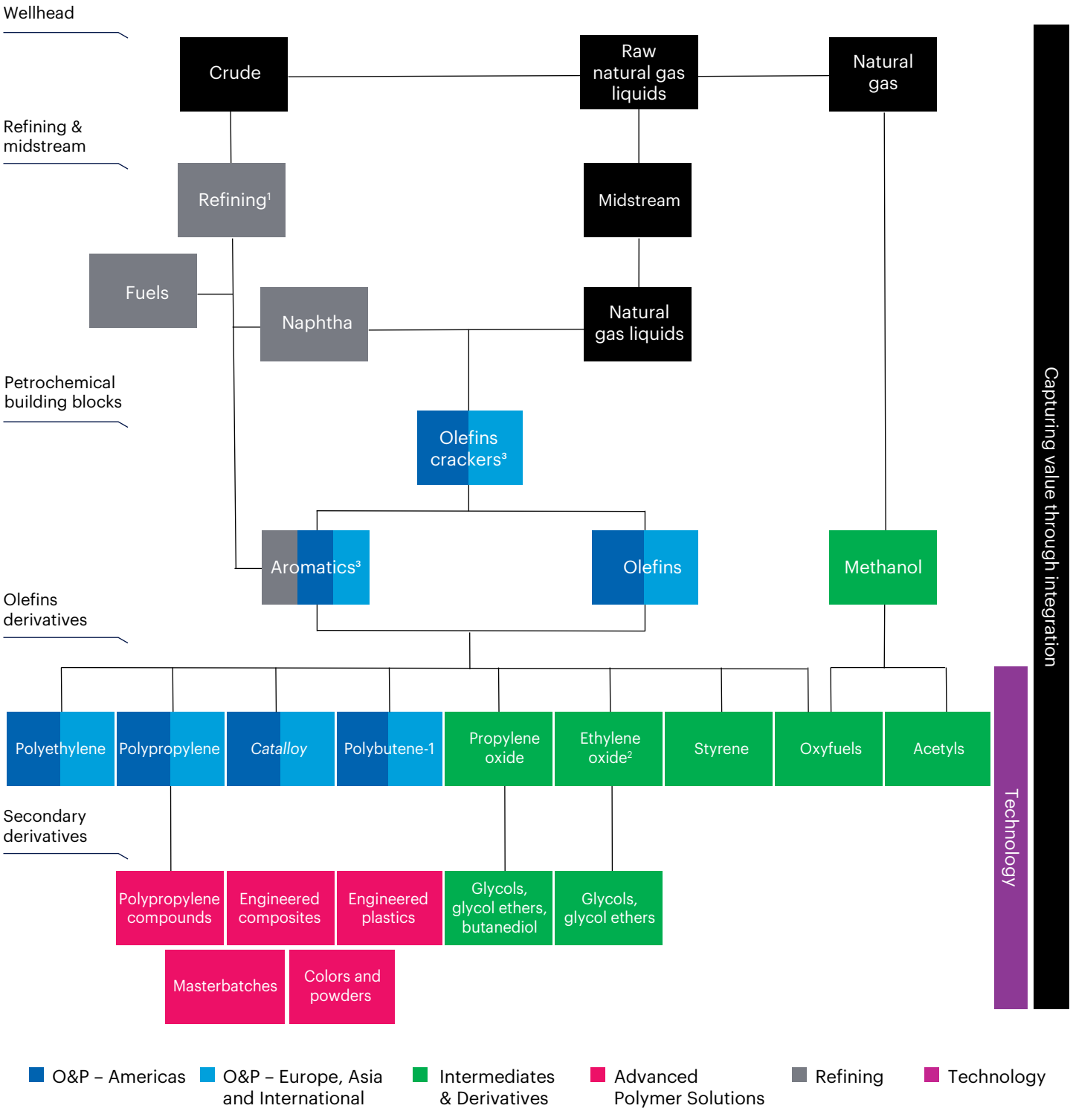
Selected Products

- Licensing
- Catalysts

Major Markets

Polyolefin and chemical manufacturing

Advantaged integrated portfolio



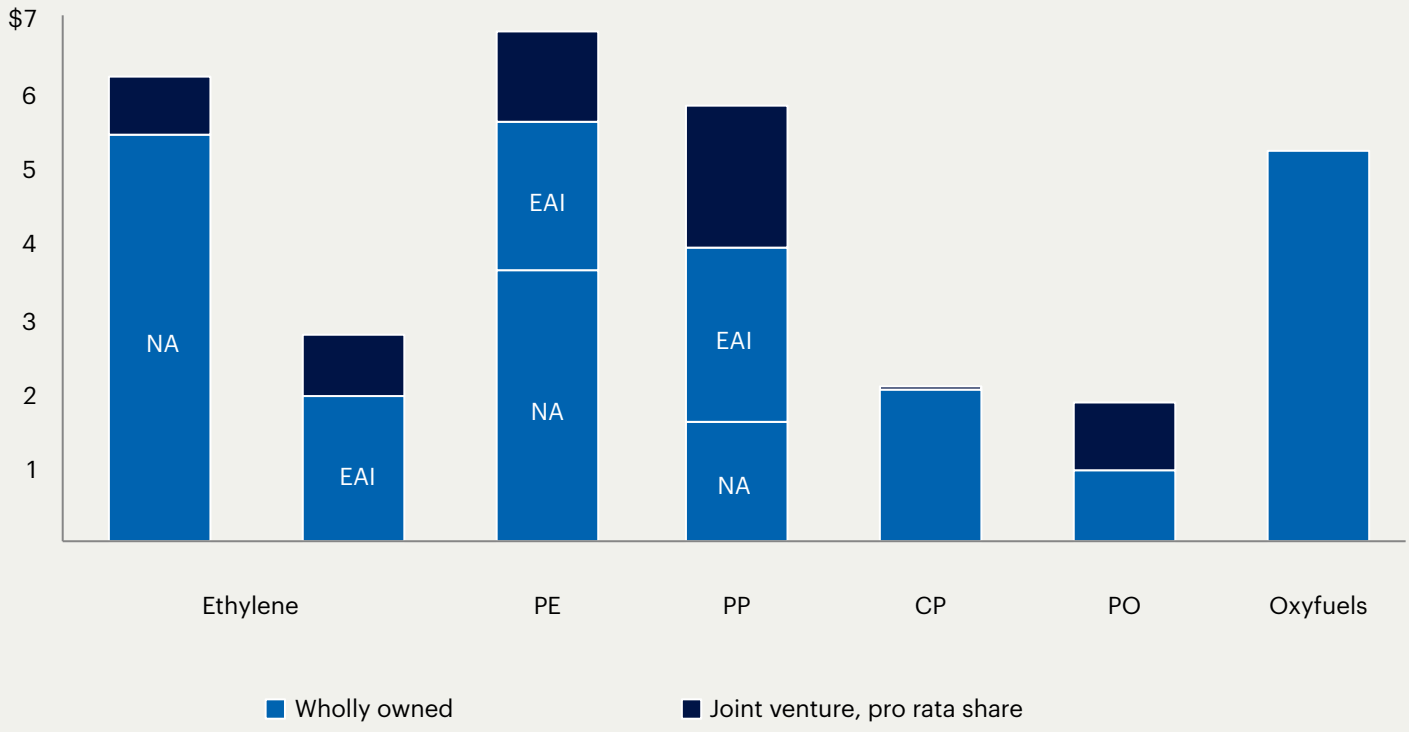
1. LYB will exit the refining business no later than the end of the first quarter 2025.
2. As of May 1, 2024, LYB completed the sale of Ethylene Oxide & Derivatives (EO&D) business to INEOS.
3. LYB's O&P EAI assets are supplied by third parties.

Earnings leverage

Estimated pre-tax earnings impact from changes in margin for selected products

Earnings Impact (USD, millions/year)

$1/ton change in margin



Notes:

Based on year-end 2023 nameplate capacity, exclusive of specific contract impacts. PP includes polypropylene and *Catalloy*. CP stands for Compounded Polymers which is polypropylene compounds, engineered plastics, masterbatches and colors from the Advanced Polymer Solutions segment.

Industry and market: Ethylene production economics

Industry and market: Ethylene production technologies

Ethylene and propylene are the primary products of an ethylene plant, also known as an 'olefins cracker'. Crackers are typically classified by the feedstock

Gas cracker

Feedstock: Ethane, propane and butane natural gas liquids (NGLs)

- Lowest construction costs
- Highest ethylene yield with few co-products
- Dominant technology in North America and Middle East

Liquid cracker

Feedstock: Naphtha, condensates and gas oil liquids

- Higher construction costs (~2x ethane-only cracker)
- Produces 1/3 ethylene and 2/3 co-products (propylene, C4's and fuels)
- Dominant technology in Europe and Asia

MTO / CTO

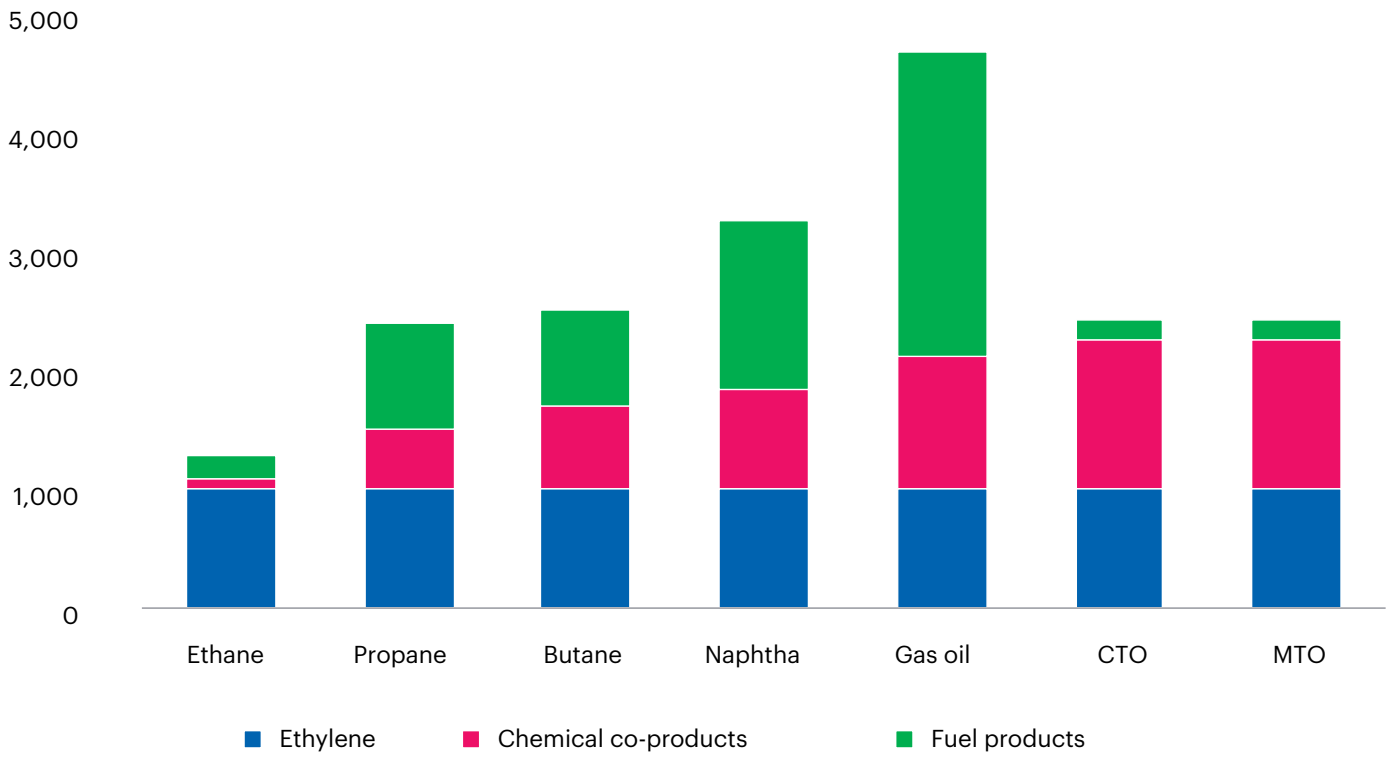
Feedstock: Methanol-to-Olefins (MTO), Coal-to-Olefins (CTO)

- MTO: similar construction costs to gas cracker; CTO: highest construction costs (~2–3x liquid cracker)
- Produces 50/50 ethylene and propylene with few other co-products
- Only found in China

Industry and market: Ethylene material balance

Liquid crackers process oil-based feedstocks and produce considerably more co-products such as propylene, butadiene and fuels than gas crackers

Product per kiloton of ethylene



Ton	Gas cracker			Liquid cracker		CTO / MTO	
Feedstock	**Ethane**	**Propane**	**Butane**	**Naphtha**	**Gas oil**	**CTO**	**MTO**
	1,289	2,381	2,504	3,247	4,673	9,696	6,060
Product							
Ethylene	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Chemical co-products[1]	72	503	687	823	1,116	1,260	1,260
Fuel products[2]	217	878	817	1,424	2,557	160	160

Source: CMA

1. Chemical co-products include propylene, butadiene, and other C4s and C5s.
2. Fuel products include hydrogen, methane, aromatics and fuel oil.

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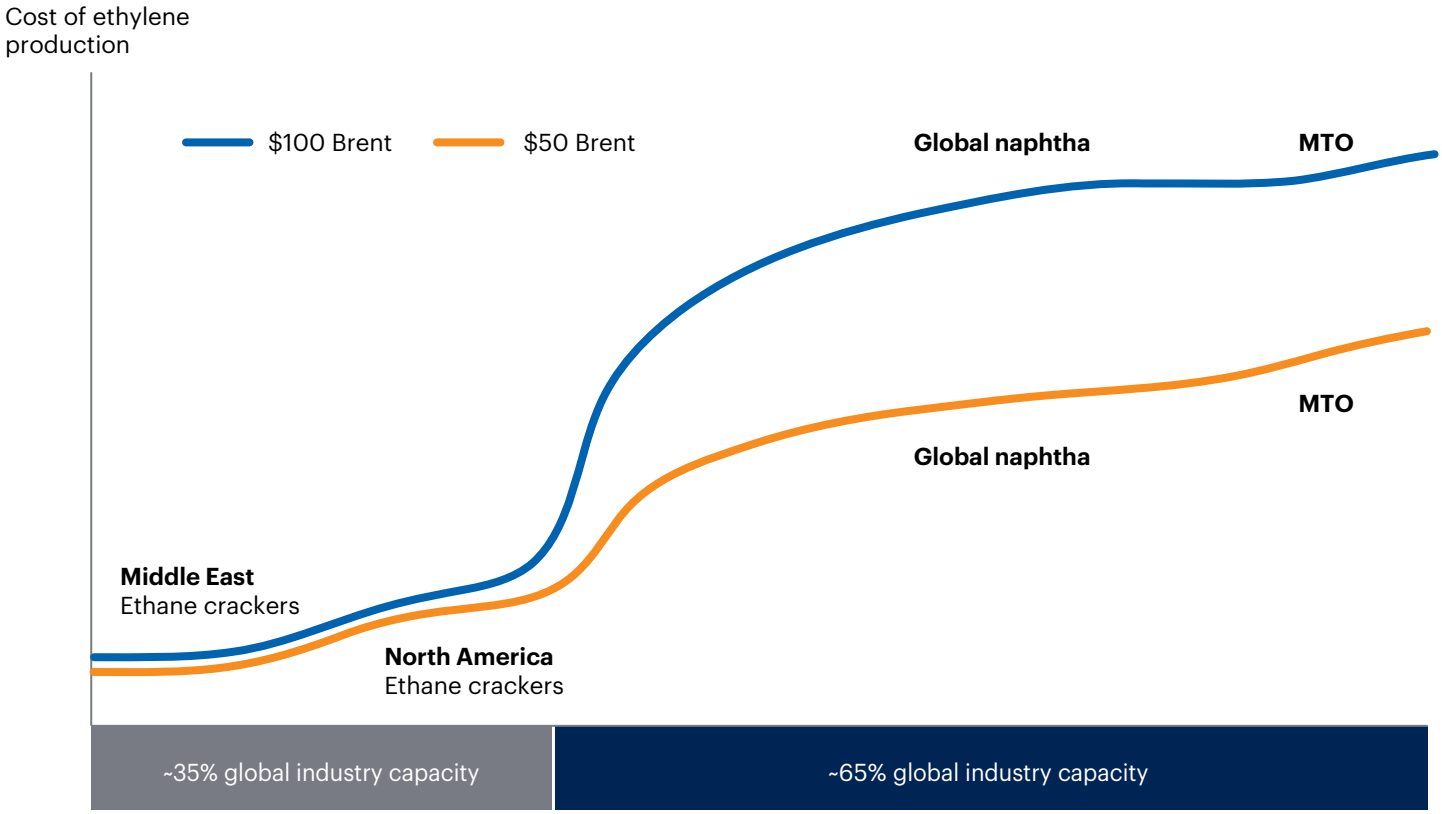
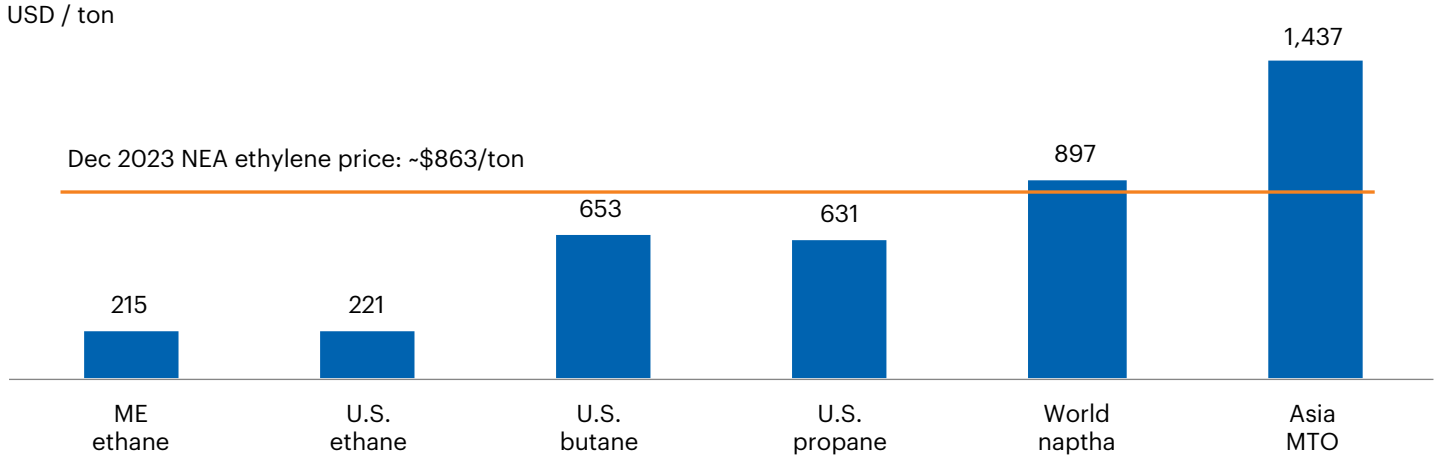
Industry and market: Cost of ethylene production

Middle Eastern and North American production benefits from locally-sourced natural gas liquid feedstocks such as ethane, propane and butane that typically provide for the lowest cost of ethylene production



Ethylene cash costs (December 2023)

USD / ton



Source: CMA. Notes: ME stands for the Middle East. NEA stands for Northeast Asia.

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Industry and market: Calculating cash cost of ethylene

The cash cost of ethylene production is the total manufacturing cost to produce ethylene, taking into consideration the value of co-product sales revenue

$$\frac{\text{Feedstock costs + Variable \& fixed costs – Co-product revenue}}{\text{Ethylene production}}$$

Example of calculating 2023 cash cost of ethylene:

	Ethylene by feedstock		
(USD per ton ethylene)	**North America ethane**	**North America naphtha**	**North East Asia MTO**
Feedstock cost	183	1,846	1,869
+ Variable cost	75	105	642
+ Fixed cost	127	127	138
- Co-product revenue	(166)	(1,555)	(1,211)
Net ethylene cost	219	523	1,438

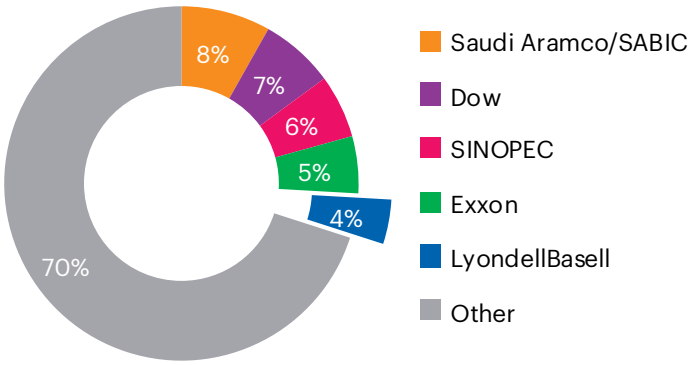
Sources: CMA and LyondellBasell. Notes: 2023 costs and co-product prices. Assumes ethane price of $137/ton, light naphtha price of $565/ton, NEA methanol price of $308/ton and NEA propylene price of $854/ton.

Olefins & Polyolefins

Industry and market: Global ethylene and polyolefins capacity

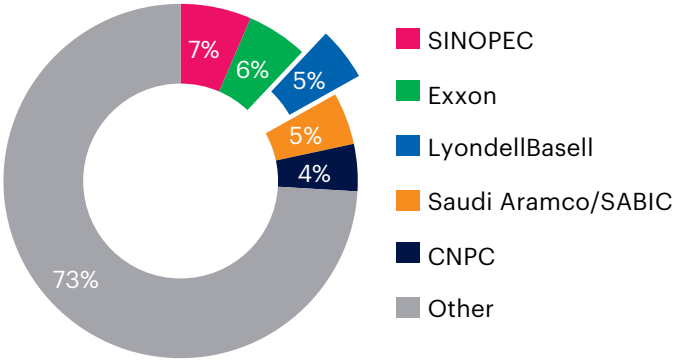
Global ethylene producers

Capacity ~220 MM ton/year

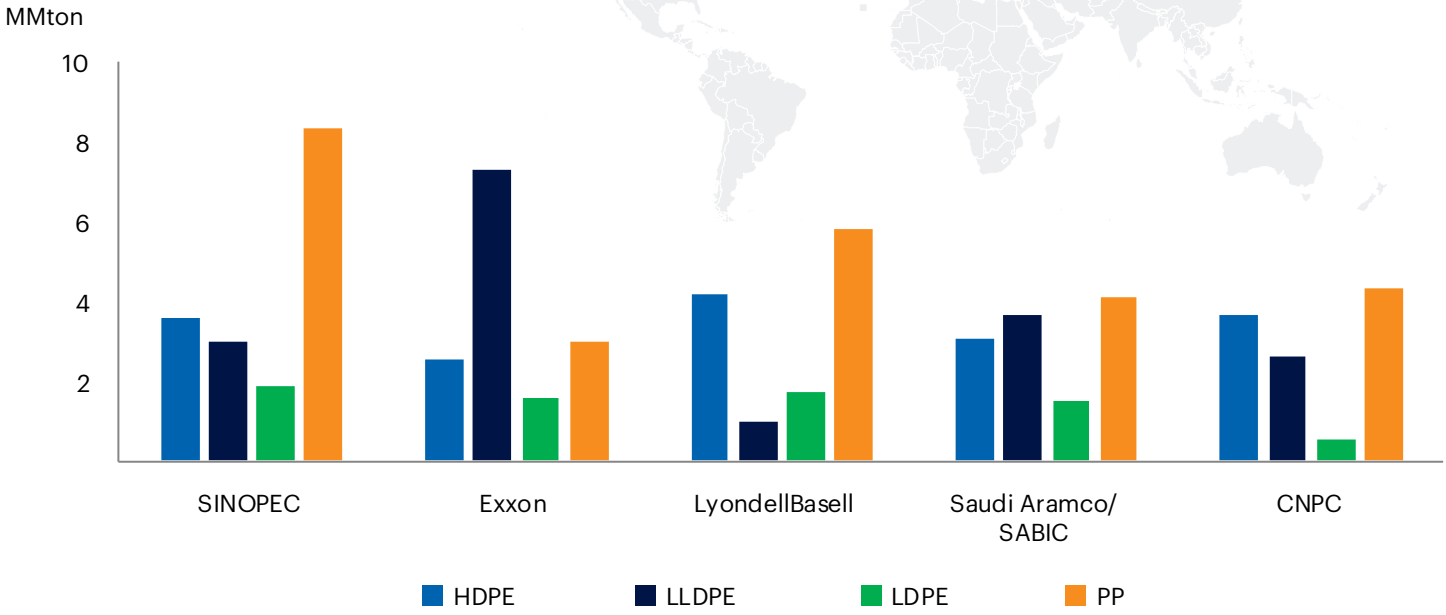


Global PE + PP producers

Capacity ~260 MM ton/year



Global PE + PP Producers



Sources: CMA and LyondellBasell. Capacity ranking as of December 31, 2023 includes pro rata shares of joint venture capacity.

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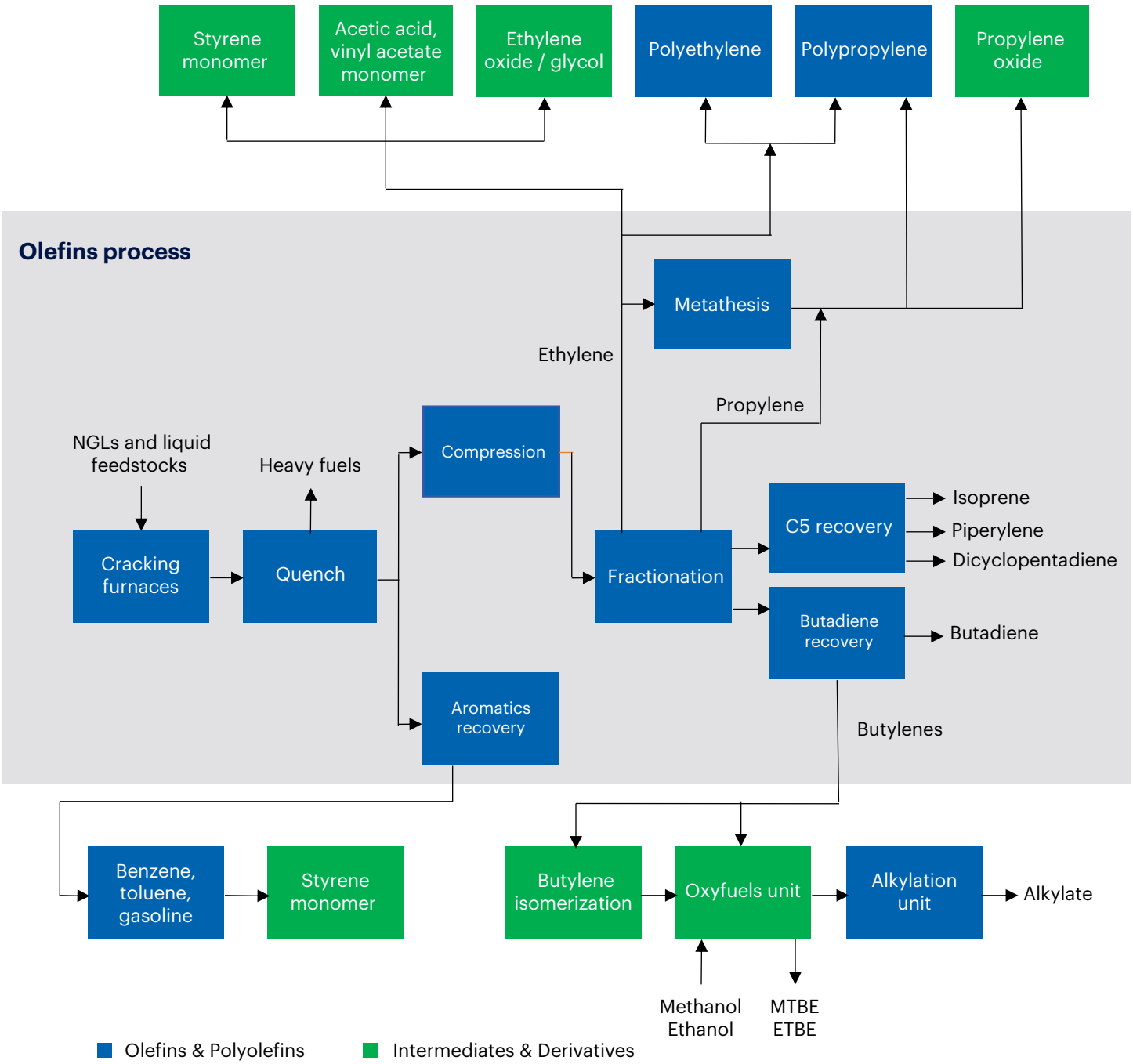
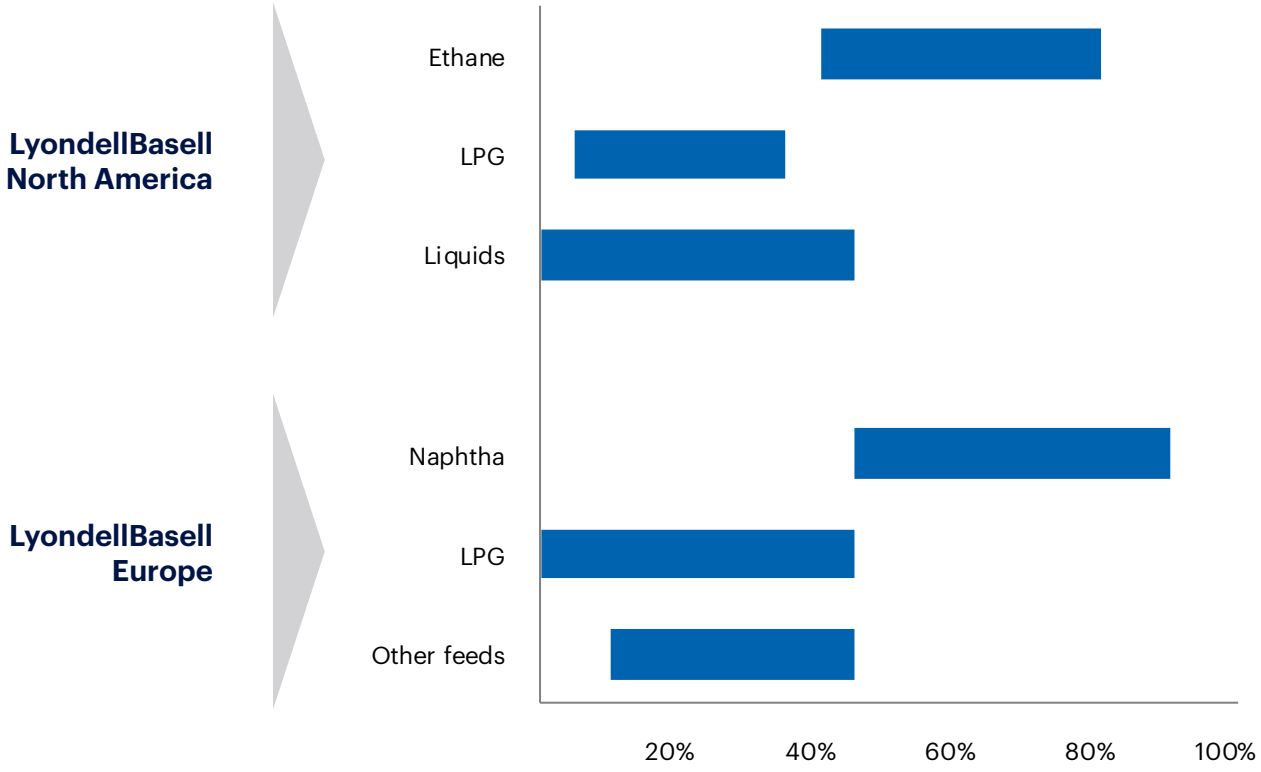
Olefins & Polyolefins: Production processes and derivative chains



Olefins & Polyolefins: Feedstock flexibility

LyondellBasell's global network of crackers utilize ethane, propane, butane, mixed "y-grade" NGLs, naphtha and other advantaged feeds. Our North American assets maximize value by optimizing across a range of cost-advantaged feedstocks available in both the U.S. Gulf Coast and Midwest markets. Our European assets have the capability to displace up to 50% of their naphtha needs with alternative feedstocks such as liquified petroleum gases (LPGs), condensate and hydrowax.



Industry feedstock flexibility	Ethane only	Ethane/propane only	Full-range	Naphtha only
North America	24%	5%	71%	0%
Europe	3%	0%	79%	18%

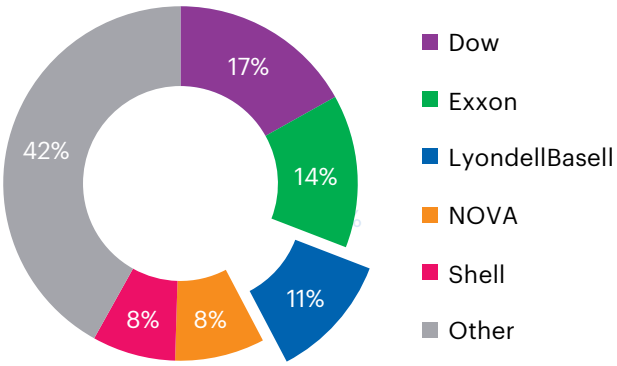
Note: Full-range for industry represents the production that may switch between ethane, propane, butane and other liquids such as naphtha.

Olefins & Polyolefins – Americas

Industry and market: North America ethylene and polyolefins capacity

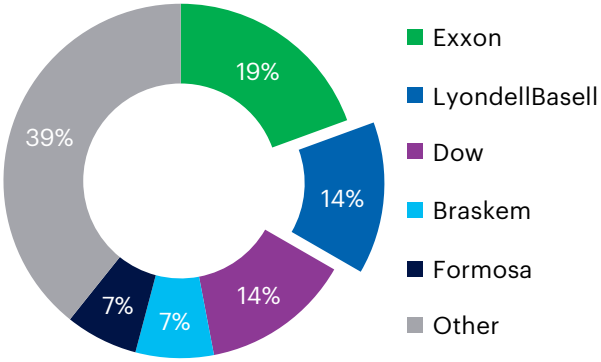
NA ethylene producers

Capacity ~54 MM ton/year

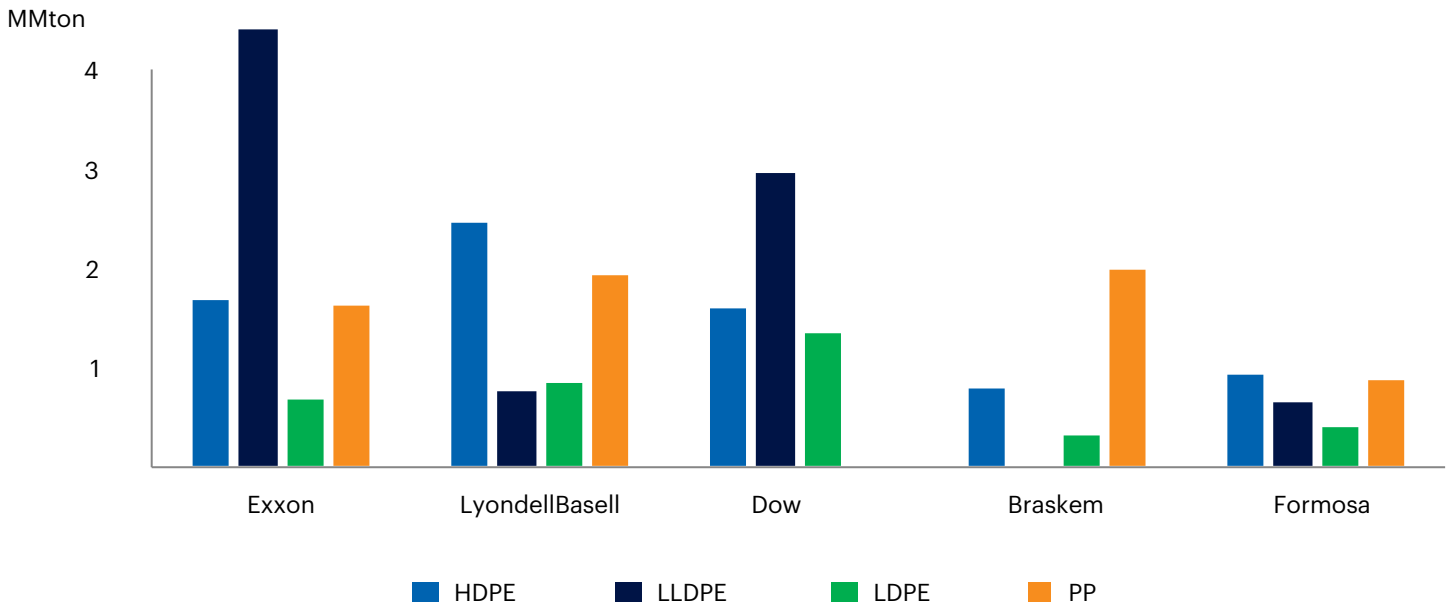


NA PE + PP producers

Capacity ~43 MM ton/year



NA PE + PP producers



Sources: CMA and LyondellBasell. Capacity ranking as of December 31, 2023 includes pro rata shares of joint venture capacity.

Olefins & Polyolefins – Americas: LYB product capacity

2023 annual capacity (KT)	
Olefins	
Ethylene	6,950
Propylene	2,500
Butadiene	400
Polyolefins	
High-density polyethylene	2,450
Low-density polyethylene	1,050
Linear low-density polyethylene	1,000
Polypropylene	1,950
Catalloy	300

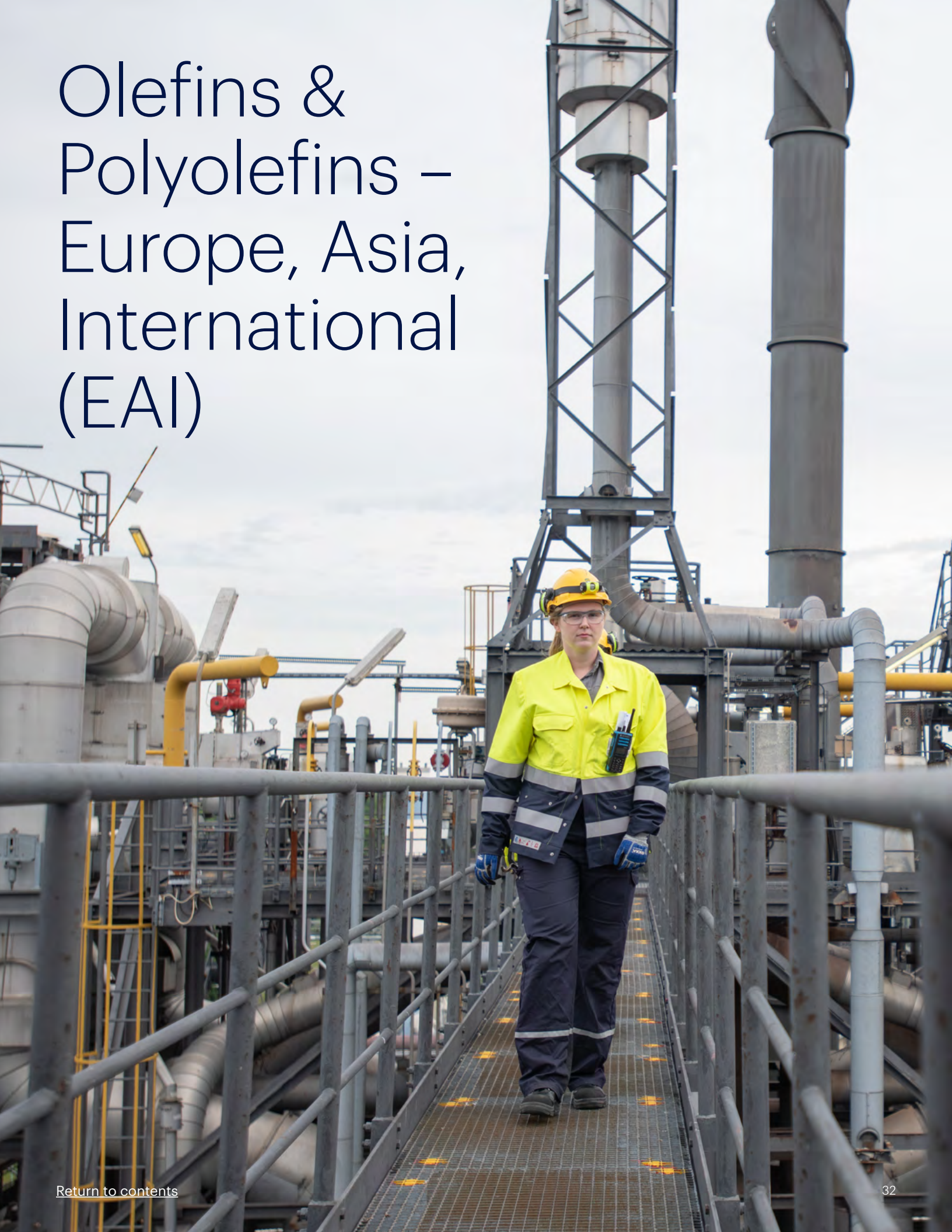
Notes: Total annual nameplate capacity includes capacity owned by third parties through a joint venture arrangement.

Joint venture product capacity

Joint venture	JV partner	Location	Product	JV capacity (KT)	LYB share (KT)	LYB share (%)
Indelpro S.A. de C.V.	Alfa	Mexico	PP	600	295	49%
Louisiana Integrated Polyethylene JV LLC	Sasol	U.S.	Ethylene	1,550	775	50%
			Propylene	20	10	
			LDPE	400	200	
			LLDPE	450	225	

Notes: JV capacity represents the joint venture's total annual nameplate capacity. LYB share represents LyondellBasell's proportional share of the joint venture's total annual nameplate capacity.

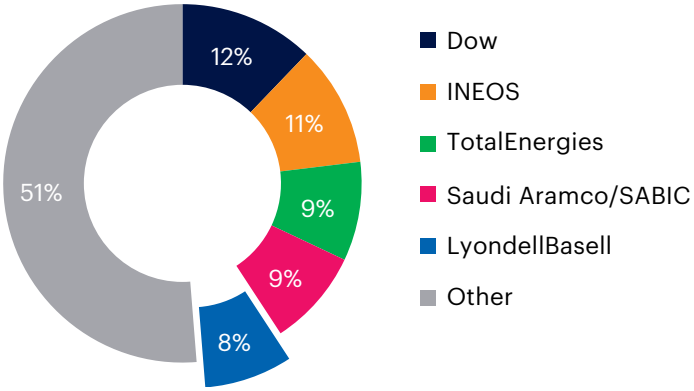
Olefins & Polyolefins – Europe, Asia, International (EAI)



Industry and market: Europe ethylene and polyolefins capacity

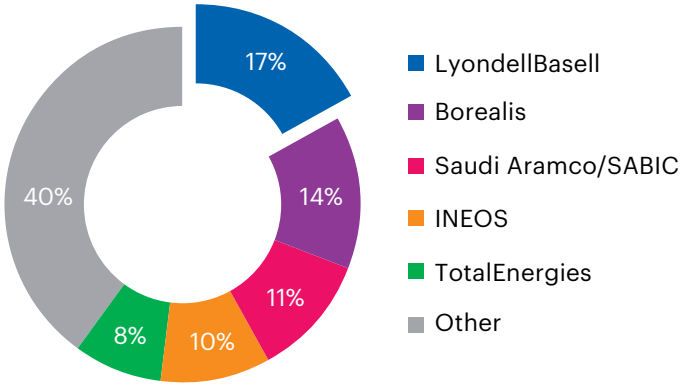
Europe ethylene producers

Capacity ~25 MM ton/year

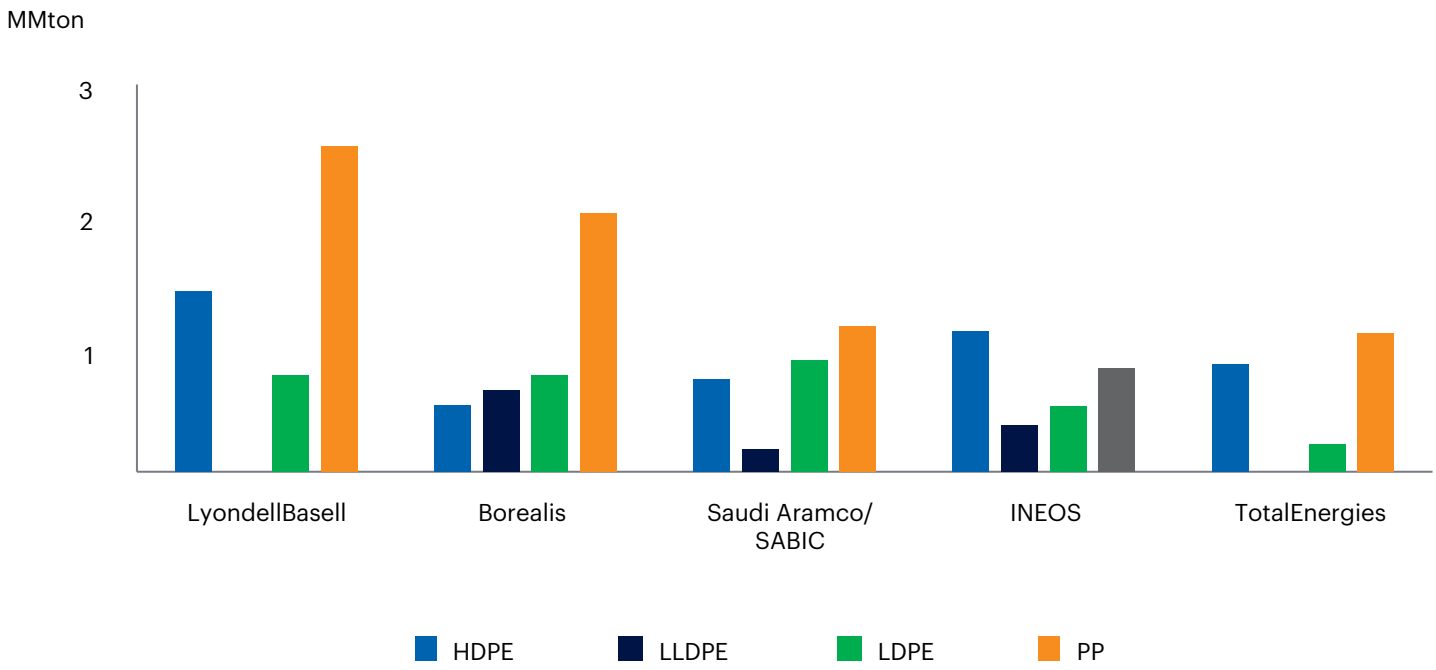


Europe PE + PP producers

Capacity ~27 MM ton/year



Europe PE + PP producers



Sources: CMA and LyondellBasell. Capacity ranking as of December 31, 2023 includes pro rata shares of joint venture capacity.

Olefins & Polyolefins – EAI: LYB product capacity

2023 annual capacity (KT)	
Olefins	
Ethylene	4,050
Propylene	2,750
Butadiene	400
Polyolefins	
High-density polyethylene	2,300
Low-density polyethylene	1,150
Linear low-density polyethylene	450
Polypropylene	6,500
Catalloy	300
Polybutene-1	50

Notes: Total annual nameplate capacity includes capacity owned by third parties through a joint venture arrangement.

LyondellBasell

Olefins & Polyolefins – EAI: LYB joint venture product capacity

Joint venture	JV partner	Location	Product	JV capacity (KT)	LYB share (KT)	LYB share (%)
Al Waha Petrochemical Company	Sahara Petrochemical, et al.	Saudi Arabia	Propylene	450	115	25%
			PP	450	115	
Basell Orlen Polyolefins Sp. Z.o.o.	Orlen	Poland	HDPE	300	150	50%
			PP	500	250	
Bora LyondellBasell Petrochemical Co. Ltd.	Liaoning BoraEnterprise Group	China	Ethylene	1,100	550	50%
			Butadiene	100	50	
			HDPE	350	175	
			LLDPE	450	225	
			PP	600	300	
			Styrene	400	200	
HMC Polymers Company Ltd.	PTT	Thailand	Propylene	300	85	29%
			PP	1,050	305	
Polymirae Company Ltd.	Daelim	South Korea	PP	950[1]	475	50%
Saudi Ethylene & Polyethylene Company	Tasnee and Sahara Petrochemical	Saudi Arabia	Ethylene	1,000	250	25%
			Propylene	300	75	
			HDPE	400	100	
			LDPE	400	100	
Saudi Polyolefins Company	Tasnee	Saudi Arabia	Propylene	450	115	25%
			PP	750	190	
			PPC	40	10	

Notes: JV capacity represents the joint venture's total annual nameplate capacity. LYB share represents LyondellBasell's proportional share of the joint venture's total annual nameplate capacity.

1. Includes proportional share of joint venture capacity.

LyondellBasell

Olefins & Polyolefins – EAI: NATPET joint venture

Grow and upgrade the core

Investment strategy

- Acquired 35% share of NATPET in May 2024, growing our core Olefins & Polyolefins business
- First-quartile assets with access to cost-advantaged propane feedstock
- Attractive returns and a platform for future growth

400 KT
Capacity per year
PDH / PP capacity

~$155 MM
Average EBITDA
2018-2022[1]

>12%
Expected LYB IRR

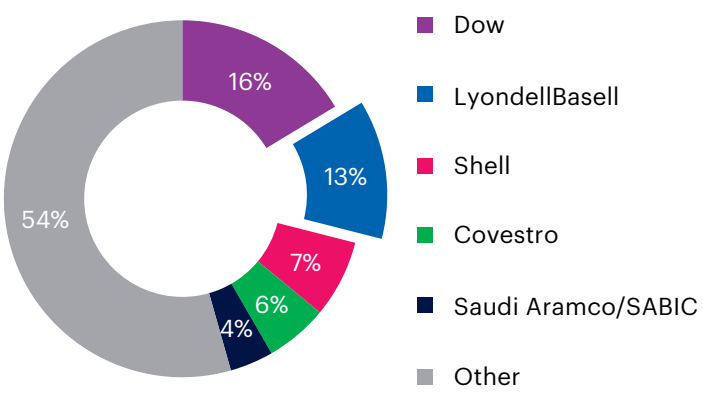
1. EBITDA for NATPET was calculated based on financial information provided by Alujain Corporation and prepared in accordance with International Financial Reporting Standards (IFRS). Please see Appendix for additional information on historical NATPET financials.

Intermediates & Derivatives

Industry and market: Global propylene oxide and oxyfuels capacity

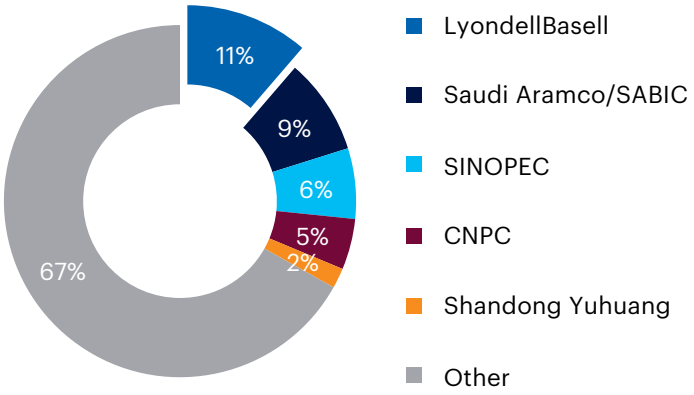
Global propylene oxide (PO) producers

Capacity ~15 MM ton/year



Global oxyfuels (MTBE/ETBE) producers

Capacity ~46 MM ton/year



Sources: CMA and LyondellBasell. Capacity ranking as of December 31, 2023 includes pro rata shares of joint venture capacity.

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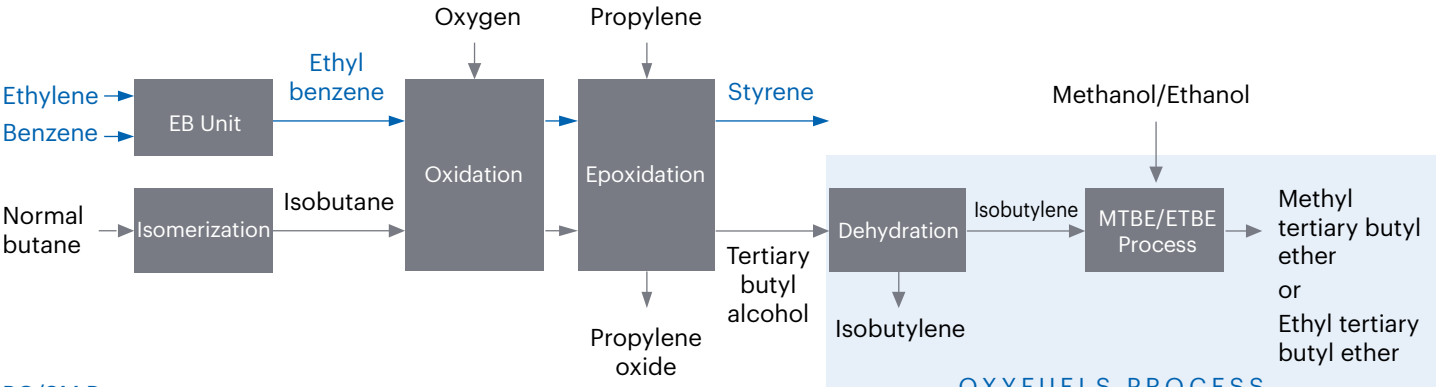
Intermediates and Derivatives: Production processes

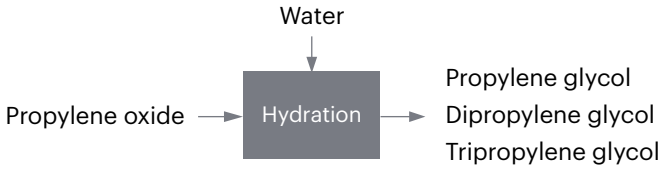
Propylene oxide process



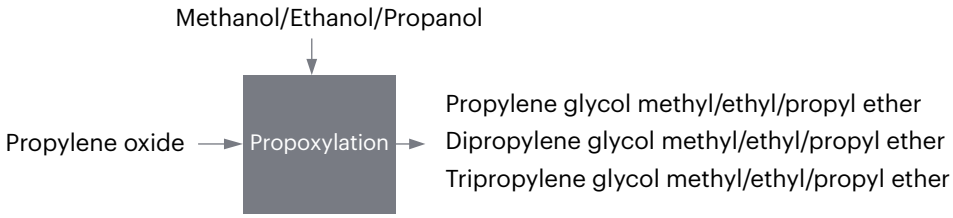
PO/SM Process

PO/TBA Process

Propylene glycol production

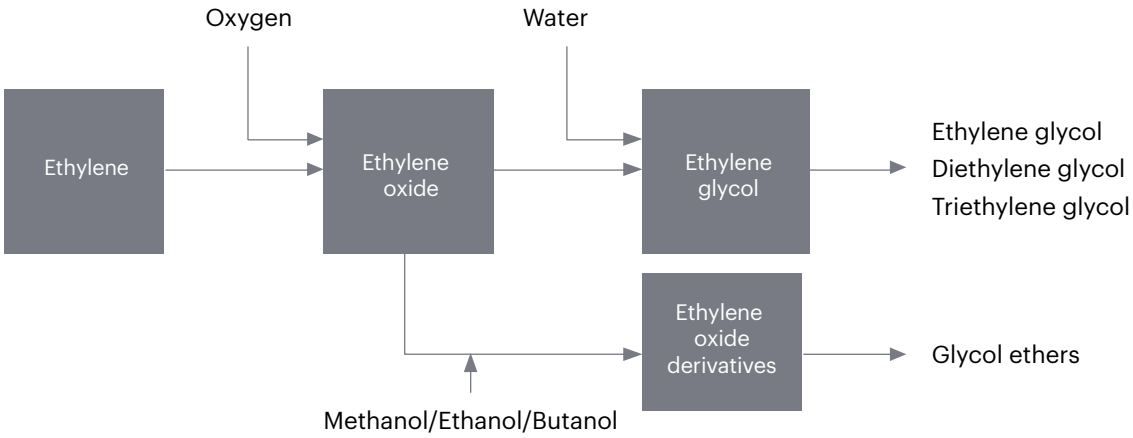


Propylene glycol ethers production

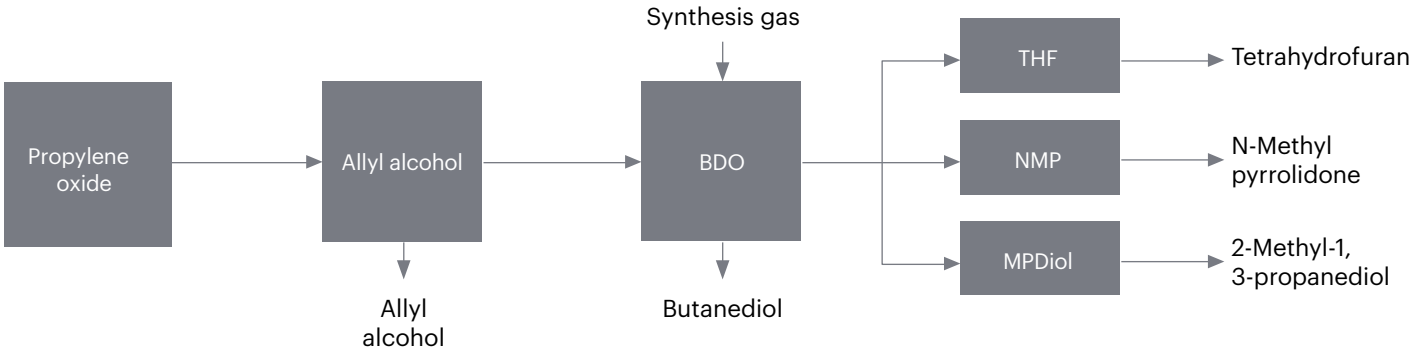


Intermediates and Derivatives: Production processes

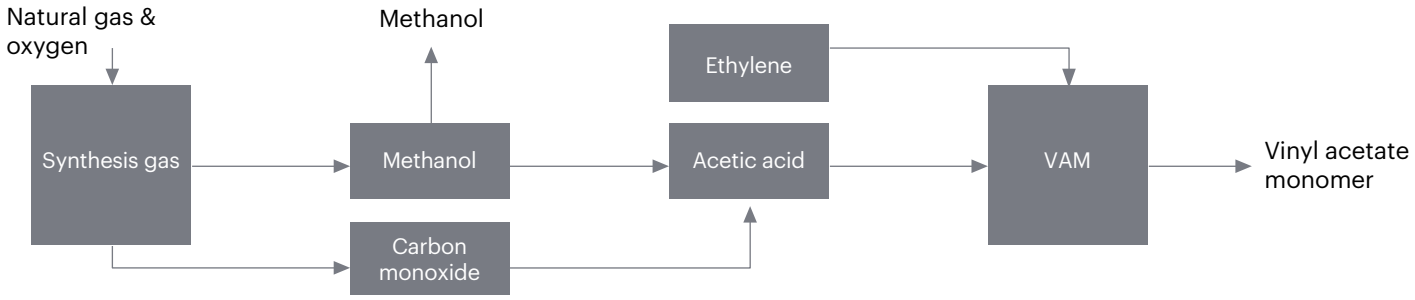
Ethylene oxide/ethylene glycol[1]



Butanediol & derivatives



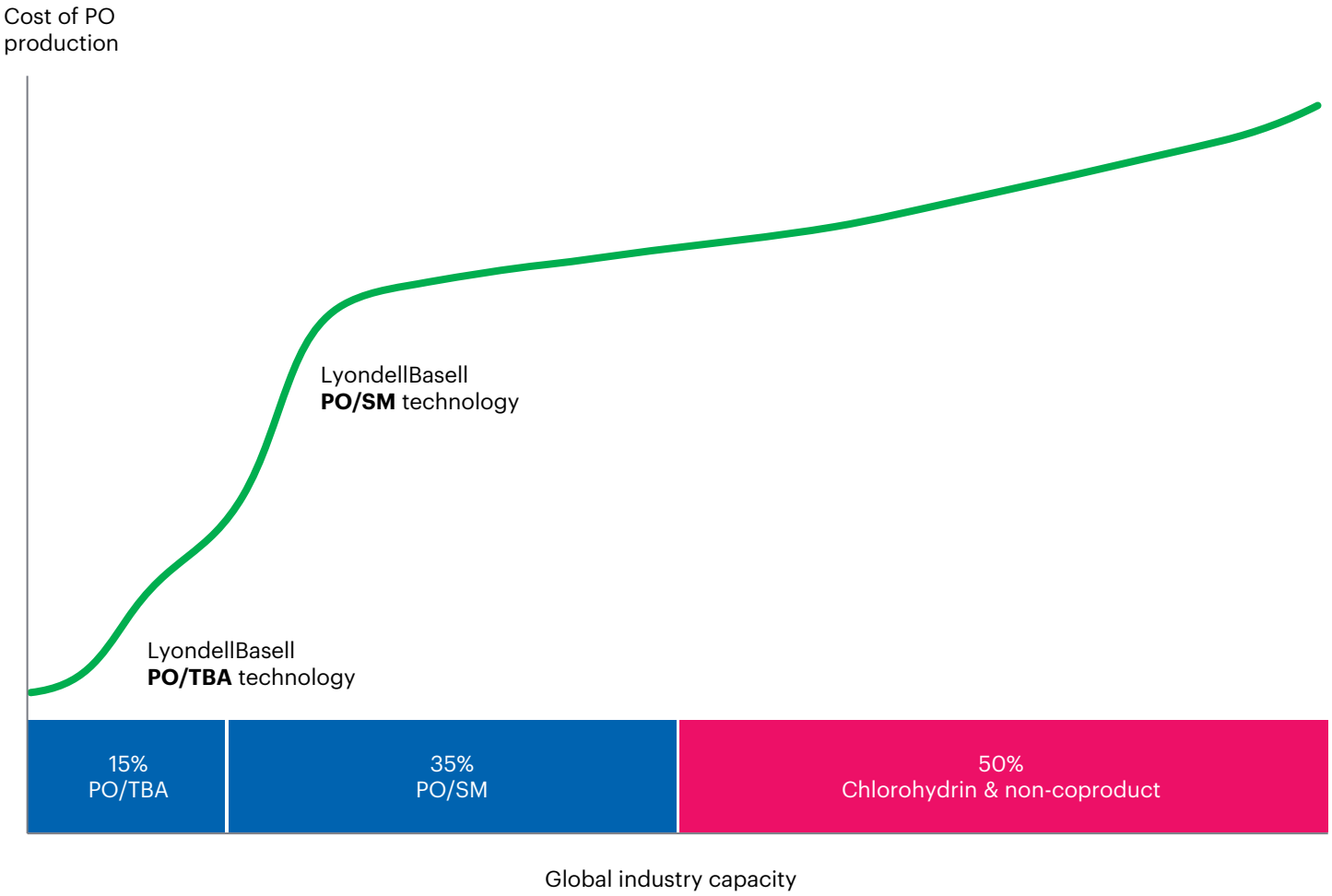
Acetyls



1. As of May 1, 2024, LYB completed the sale of Ethylene Oxide & Derivatives (EO&D) business to INEOS.

Industry and market: Cost of propylene oxide production

LyondellBasell's proprietary propylene oxide (PO) / tertiary butyl alcohol (TBA) and propylene oxide (PO) / styrene monomer (SM) process technologies provide the lowest cost of production



Sources: CMA, ICIS, Argus and LyondellBasell based on 2023 production cost.

LyondellBasell

Intermediates & Derivatives: LYB product capacity

2023 annual capacity (KT)	NA	EU	Asia	Global
Propylene oxide & derivatives				
Propylene oxide	1,700	800	550	3,050
Propylene glycol	300	150	–	450
Propylene glycol ethers	50	150	–	200
Butanediol	50	150	–	200
Intermediate chemicals				
Acetyls:				
Methanol	1,450	–	–	1,450
Acetic acid	550	–	–	550
Vinyl acetate monomer	300	–	–	300
Ethylene derivatives:[1]				
Ethylene oxide	400	–	–	400
Ethylene glycol	300	–	–	300
Other - ethers, amines	150	–	–	150
Propylene oxide co-product:				
Styrene monomer	1,400	700	1,600	3,700
Oxyfuels & related products				
Propylene oxide co-product:				
Tertiary butyl alcohol	2,550	1,200	–	3,750
Isobutylene	500	200	–	700
Oxyfuels	3,950	1,250	–	5,200

Notes: Annual capacity includes capacity owned by third parties through a joint venture arrangement. Styrene monomer includes capacity from the Bora LyondellBasell Petrochemical Co. Ltd. joint venture reported within the Olefins & Polyolefins–EAI segment.

1. As of May 1, 2024, LYB completed the sale of Ethylene Oxide & Derivatives (EO&D) business to INEOS.

LyondellBasell

Intermediates & Derivatives: LYB joint venture product capacity

Joint venture	JV partner	Location	Product	JV capacity (KT)	LYB share (KT)	LYB share (%)
Ningbo ZRCC LCC Ltd.	ZRCC	China	PO	275	50	19%
			SM	600	0	0%
Ningbo ZRCC LYB NMC Ltd.	ZRCC	China	PO	275	140	50%
			SM	600	300	50%
PO (U.S.) Joint Venture	Covestro	U.S.	PO	1,250	(a)	(a)
LyondellBasell Covestro Manufacturing Maasvlakte V.O.F.	Covestro	The Netherlands	PO	300	150	50%
			SM	700	350	50%

Notes: JV capacity represents the joint venture's total annual nameplate capacity. LYB share represents LyondellBasell's proportional share of the joint venture's total annual nameplate capacity.

(a) The parties' rights in the joint venture are based on off-take volumes as opposed to ownership percentages. Covestro's interest represents ownership of an in-kind portion of the propylene oxide production of 0.7 million tons per year. LyondellBasell takes, in-kind, the remaining propylene oxide production and all co-product (styrene monomer and tertiary butyl alcohol) production.

LyondellBasell

Grow and upgrade the core

Intermediates & Derivatives: Successful startup of PO/TBA asset in 2023

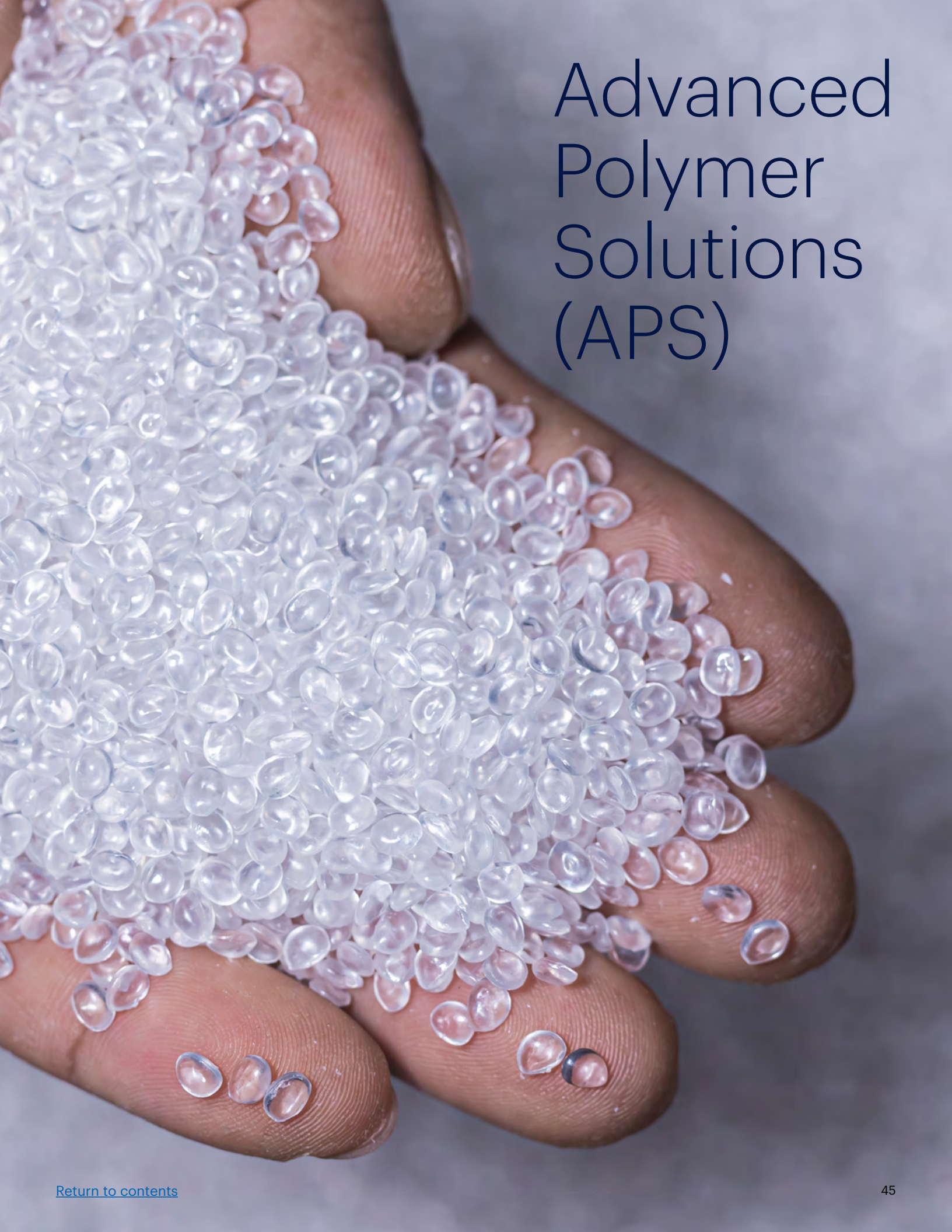
Investment strategy

- LyondellBasell's largest greenfield investment
- Meeting rising global demand for energy-saving polyurethanes and clean-burning oxyfuels
- Capturing cost-advantaged U.S. Gulf Coast feedstocks

470 / 1,000 KT
capacity per year
PO / TBA

~$450 MM
per year
mid-cycle EBITDA

Note: Successful startup in 1Q 2023. Mid-cycle EBITDA is nameplate capacity multiplied by 2017-2019 average cash margins.

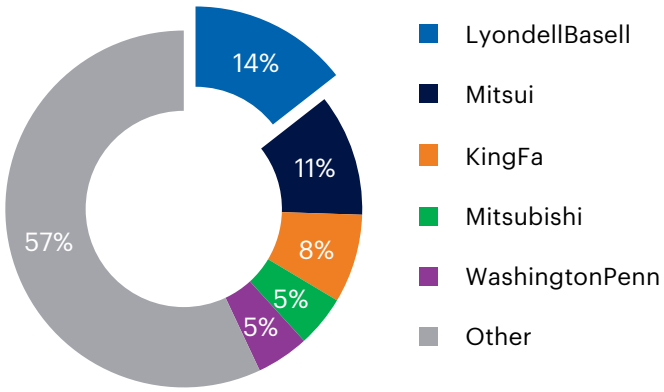


Advanced Polymer Solutions (APS)

Industry and market:
Global polypropylene compounds capacity

Global polypropylene compounds producers

Capacity ~9 MM ton/year



Sources: AMI Consulting and LyondellBasell. Capacity ranking as of December 31, 2023 and includes pro rata shares of joint venture capacity.

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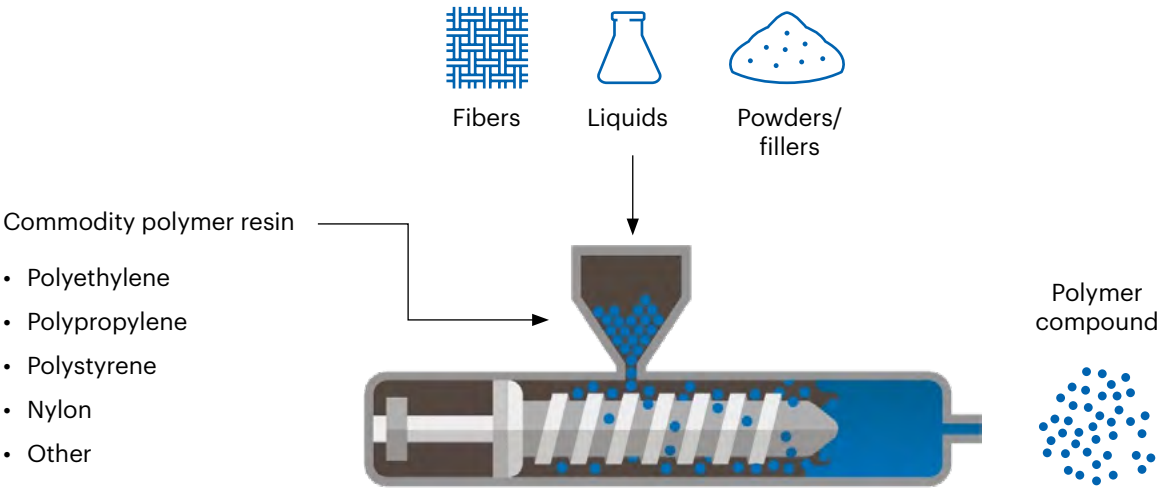
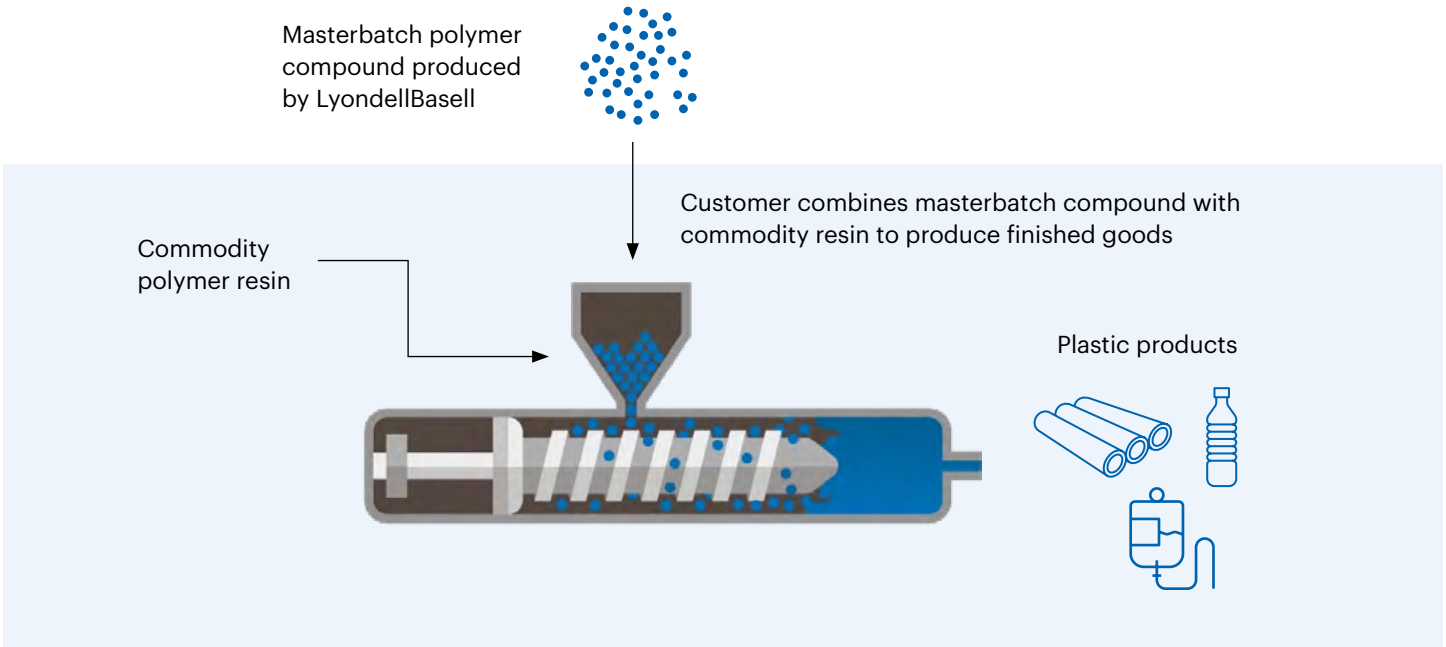
APS: Production processes

Polymer compounding

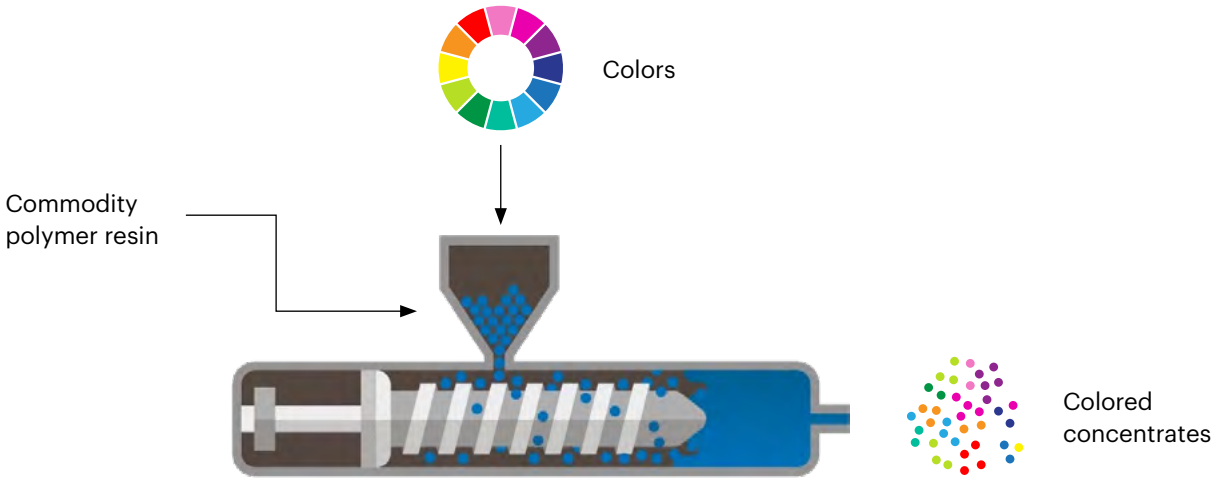


Masterbatch

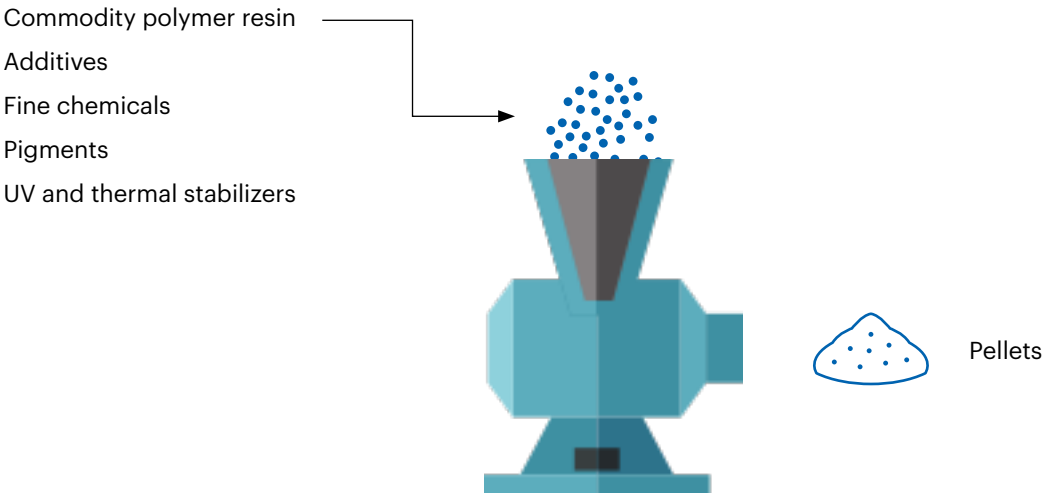


APS: Production processes

Custom performance colors



Masterbatch



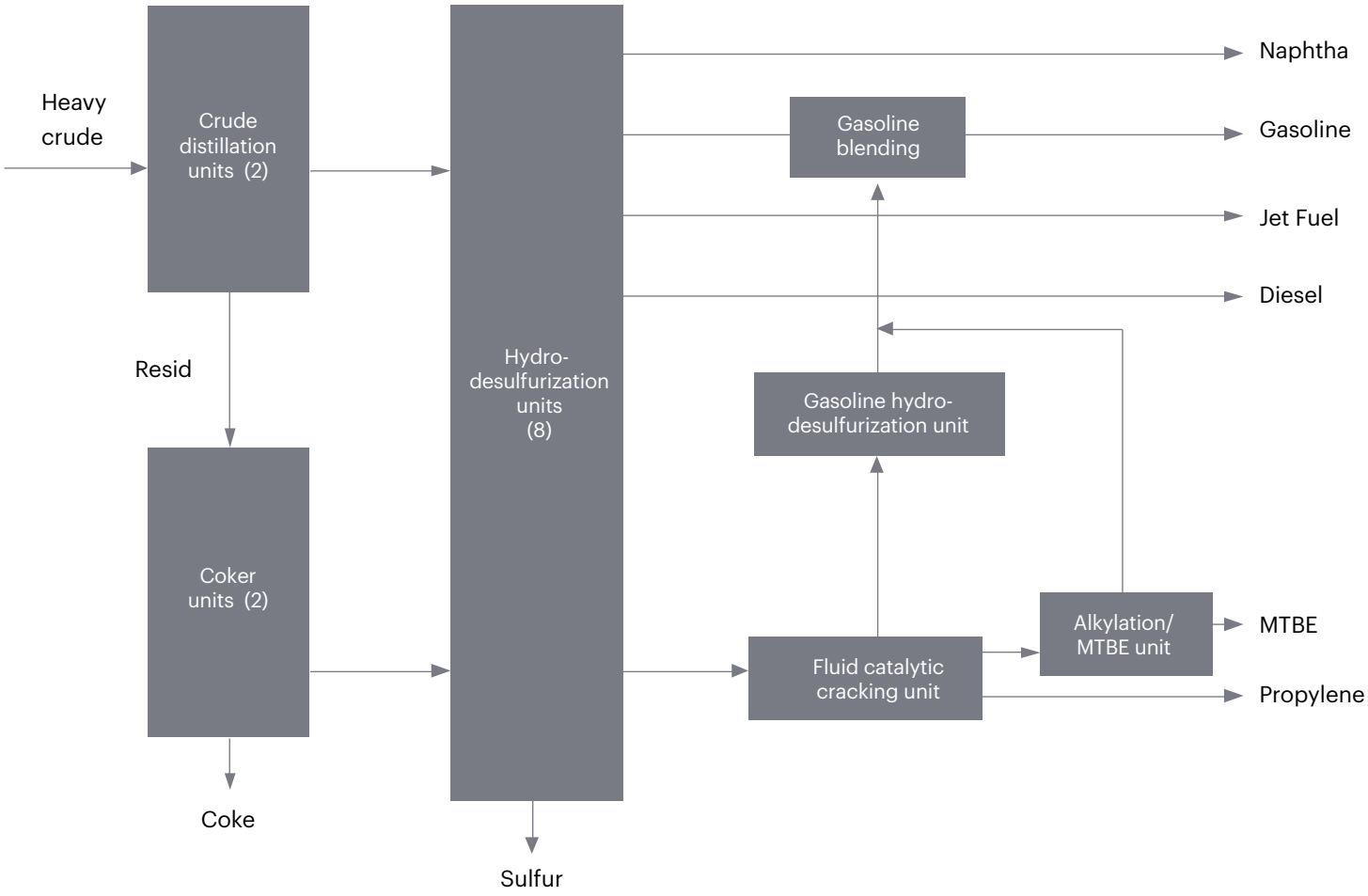
APS: LYB product capacity

2023 annual capacity (KT)	
Compounding & solutions	
Polypropylene compounds	1,450
Engineered plastics	350
Masterbatch	400
Colors	40

Notes: Annual capacity includes capacity owned by third parties through a joint venture arrangement. Polypropylene compounds includes capacity from the Saudi Polyolefins Company joint venture reported within the Olefins & Polyolefins–EAI segment as equity income.

Refining

Refining: Production process



Note: LYB will exit the refining business no later than the end of the first quarter 2025. Gasoline hydro-desulfurization unit is capable of meeting the Tier III sulfur specification (10 ppm).

Refining: LYB product capacity

2023 annual capacity (barrels per day)

Houston Refinery	
Crude distillation	268,000
Gasoline and components	120,000
Ultra low-sulfur diesel	95,000
Jet fuel	25,000
Naphtha	30,000

11.1
Nelson Complexity

50%
Distillate yield

Produces tier 3 gasoline and ultra low sulfur diesel

Note: LYB will exit the refining business no later than the end of the first quarter 2025.

Technology

Technology: Expertise and innovation

Our products and technologies have driven growth in the petrochemical industry for 70 years

1953-1954
Ziegler and Natta breakthroughs in **PE** and **PP**

1955
Introduced ***Hostalen*** HDPE process

1969
Commercialized our proprietary **PO/TBA** process

1973
Launched our proprietary **PO/SM** process

1982
Introduced ***Spheripol***, the most widely-used polyolefins process

1990
Developed ***Catalloy*** process technology for advanced resins

2002
Introduced ***Spherizone*** PP process technology

2018
Partnered with SUEZ to create **Quality Circular Polymers (QCP)**

2020
Start-up of first world-scale ***Hyperzone*** HDPE plant

2023
Final investment decision ***MoReTec-1*** in Germany

> 65

Catalyst products

TECHNOLOGY SERVICES

Continuous plant optimization support

> 350

Polyolefin licenses sold

Technology:
LYB portfolio of licensed technology

Polyolefin process technologies		
Spherizone	PP	Multi-zone circulating reactor with flexible operating conditions which manufactures high-performance PP with enhanced properties
Spheripol	PP	Modular liquid propylene and optional gas-phase copolymerization reactor with outstanding reliability and leading operating and investment costs
Lupotech	LDPE EVA	High-pressure tubular reactor offering the lowest operating and investment costs for premium market applications
Hostalen	HDPE	Multimodal slurry process with leading stiffness-toughness balance, impact resistance, high stress cracking resistance and processing advantages
Spherilene	HDPE LLDPE	Single gas-phase reactor process for the production of a wide range of PE products with low investment costs

Chemical process technologies[1]	
Olefins conversion & recovery	• *Trans4m S* — Isobutylene • *Trans4m BD* — Butadiene • *Trans4m C5* — DCPD, isoprene
Aromatics extraction	• *Trans4m BTX* — Benzene, toluene, xylenes
Acetyls	• *Glacido* — Acetic acid • *Vacido* — VAM
Oxiranes & derivatives	• PO/SM & PO/TBA • BDO, THF, NMP and GBL

1. Available to LyondellBasell joint ventures only.

LyondellBasell

Technology: Advancing our *MoReTec* technology

Build a profitable Circular & Low Carbon Solutions business

The *MoReTec* process is a differentiated advanced catalytic recycling technology that maximizes plastic-to-plastic recycling at scale

- Cost-advantaged continuous single-train technology with innovative design and scale
- Novel catalyst technology can reduce energy consumption through lower operating temperatures while improving carbon efficiency by minimizing low-value by-products
- This unique process design allows for electrical heating and reduces emissions through the use of renewable electricity

The first industrial scale *MoReTec* unit in Wesseling, Germany, is expected to provide LYB valuable operating experience and technological know-how to scale-up and commercialize our *MoReTec* technology

- Designed as a large, single-train unit while many competing technologies are smaller and rely on modularization
- Scalable, high-yield process that benefits from integrated hubs located at our existing world-scale facilities
- Expected startup of 50 KTA *MoReTec*-1 unit

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Appendix

Glossary of acronyms

Acronym	Definition
B	Billion
Bbl	Barrel
BDO	Butanediol
BTU	British thermal unit
CLCS	Circular & Low Carbon Solutions
CMA	Chemical market analytics
COE	Cost of ethylene
CP	Compounded polymers
CTO	Coal-to-olefins
DCPD	Dicyclopentadiene
EAI	Europe, Asia, International
EBITDA	Earnings before interest, taxes, depreciation and amortization
EC	Engineered composites
EG	Ethylene glycol
EO	Ethylene oxide
ETBE	Ethyl tertiary butyl ether
EU	Europe
EUR	Euros
GAAP	Generally accepted accounting principles
GBL	Gamma-butyrolactone
HDPE	High-density polyethylene
I&D	Intermediates & Derivatives
Lb	Pound
HPPO	Hydrogen peroxide to propylene oxide
JV	Joint venture
Kiloton	Thousand metric tons
KT	Thousand metric tons
KTA	Thousand metric tons per annum
LDPE	Low-density polyethylene
LLDPE	Linear low-density polyethylene

Acronym	Definition
LPG	Liquefied petroleum gas
MM	Million
MPDiol	2-Methyl-1, 3-propanediol
MTBE	Methyl tertiary butyl ether
MTO	Methanol-to-olefins
MS	Masterbatch solutions
NA	North America
NATPET	National Petrochemical Industrial Company
NGL	Natural gas liquid
NMP	N-methyl pyrrolidone
O&P	Olefins & Polyolefins
PB-1	Polybutene-1
PDH	Propane dehydrogenation
PE	Polyethylene
PO	Propylene oxide
PO&D	Propylene oxide and derivatives
PO/SM	Propylene oxide/styrene monomer
PO/TBA	Propylene oxide/tertiary butyl alcohol
PP	Polypropylene
PPC	Polypropylene compounds
PPM	Parts per million
QCP	Quality Circular Polymers Holdings
SM	Styrene monomer
SP	Specialty powders
TBA	Tertiary butyl alcohol
THF	Tetrahydrofuran
Ton	Metric ton
U.S.	United States
USD	U.S. dollars
VAM	Vinyl acetate monomer

Appendix

Selected benchmark market prices and margins

		2021	2022	2023
Olefins and Polyolefins – Americas				
Benchmark market prices				
West Texas Intermediate crude oil	USD/Bbl	67.97	94.44	77.69
Brent crude oil	USD/Bbl	70.79	98.90	82.22
Houston Ship Channel natural gas	USD/MMBTUs	3.61	5.47	2.18
U.S. weighted average COE production	USD/ton	344	539	308
U.S. ethylene	USD/ton	912	858	657
U.S. polyethylene [high density]	USD/ton	1,863	1,529	1,196
U.S. propylene	USD/ton	1,587	1,104	954
U.S. polypropylene [homopolymer]	USD/ton	2,568	1,859	1,329
Olefins and Polyolefins – Europe, Asia, International				
Benchmark market prices				
Western Europe weighted average COE production	EUR/ton	537	572	660
Western Europe ethylene	EUR/ton	1,098	1,413	1,206
Western Europe polyethylene [high density]	EUR/ton	1,457	1,575	1,315
Western Europe propylene	EUR/ton	1,082	1,386	1,087
Western Europe polypropylene [homopolymer]	EUR/ton	1,632	1,695	1,310
Intermediates and Derivatives				
Benchmark market margin				
MTBE - Northwest Europe	USD/ton	100	453	543
Refining				
Benchmark market margin				
Brent - 2-1-1	USD/Bbl	14.39	33.62	25.71
Brent - Maya differential	USD/Bbl	6.48	11.71	13.26

Sources: LyondellBasell, CMA and Platts.

Note: Benchmark market prices for U.S. and Western Europe polyethylene and polypropylene reflect discounted prices.

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Appendix

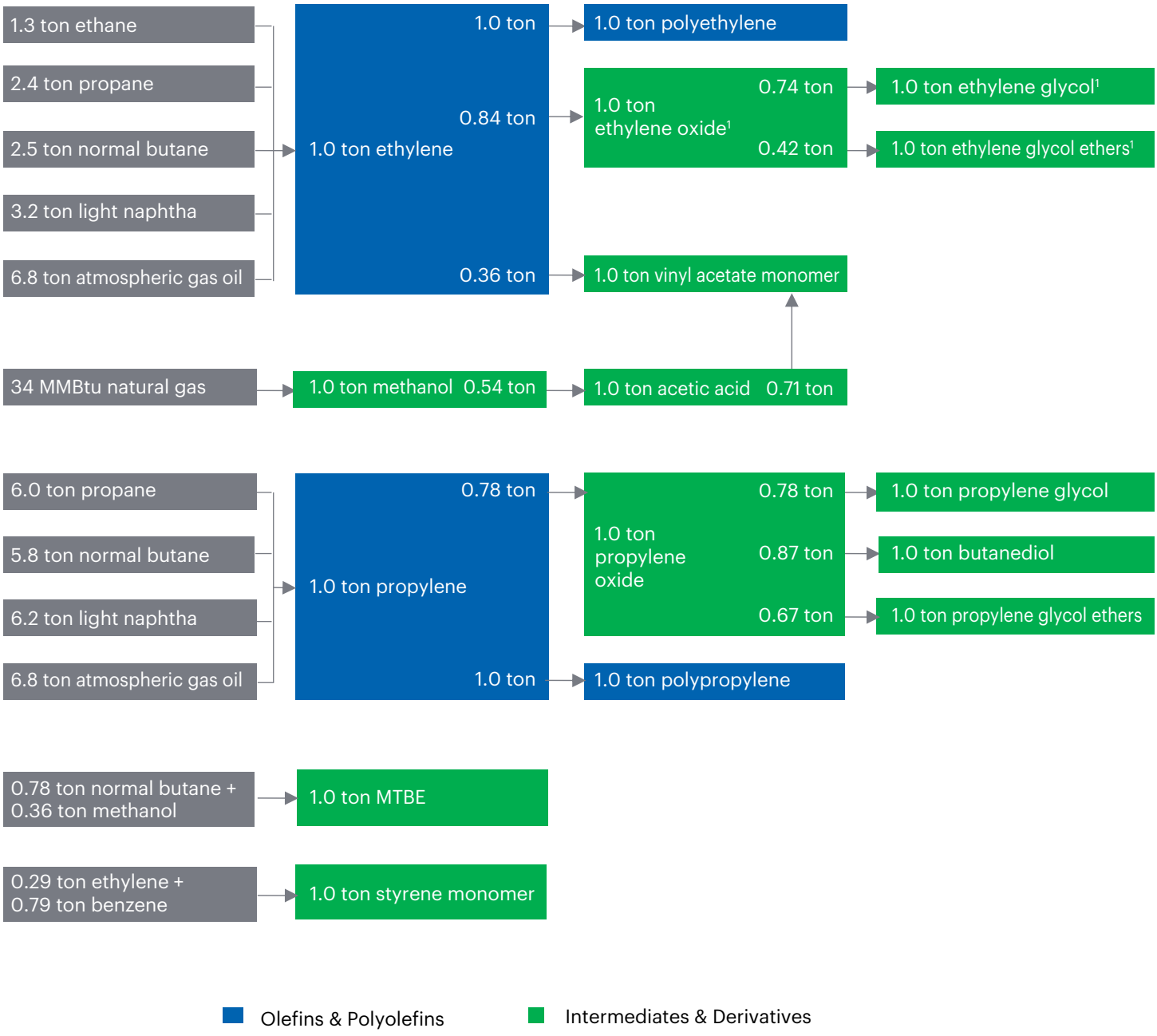
Conversion factors

General conversions				
	1	metric ton	2,205	pound
	1	barrel	42	gallon

Product density				
Benzene	7.4	lb/gallon	883	kg/cubic meter
Ethane	3.0	lb/gallon	355	kg/cubic meter
Ethanol	6.6	lb/gallon	791	kg/cubic meter
Gas oil	7.2	lb/gallon	857	kg/cubic meter
Methanol	6.6	lb/gallon	794	kg/cubic meter
MTBE/ETBE	6.2	lb/gallon	745	kg/cubic meter
Naphtha (light)	5.6	lb/gallon	665	kg/cubic meter
Normal butane	4.9	lb/gallon	585	kg/cubic meter
Propane	4.2	lb/gallon	508	kg/cubic meter

Appendix

Major product yield factors



1. As of May 01, 2024, LyondellBasell completed the sale of Ethylene Oxide & Derivatives (EO&D) business to INEOS.

Appendix

Information related to financial measures

This report makes reference to certain "non-GAAP" financial measures as defined in Regulation G of the U.S. Securities Exchange Act of 1934, as amended. We report our financial results in accordance with U.S. generally accepted accounting principles, but believe that certain non-GAAP financial measures provide useful supplemental information to investors. Non-GAAP financial measures should be considered as a supplement to, and not as a substitute for, or superior to, the financial measures prepared in accordance with GAAP. Our non-GAAP measures are as follows:

Cash conversion - Net cash provided by operating activities divided by EBITDA excluding LCM and impairment. This measure is commonly used by investors to evaluate liquidity. We believe cash conversion is an important financial metric as it helps the Company determine how efficiently it is converting its earnings into cash.

EBITDA - Income from continuing operations plus interest expense (net), provision for (benefit from) income taxes, and depreciation and amortization. This measure provides useful supplemental information to investors regarding the underlying business trends and performance of our ongoing operations and is useful for period-over-period comparisons of such operations. EBITDA should not be considered an alternative to profit or operating profit for any period as an indicator of our performance, or as an alternative to operating cash flows as a measure of our liquidity.

Mid-cycle EBITDA - EBITDA estimated based on nameplate capacity multiplied by 2017-2019 average cash margins. Mid-cycle EBITDA cannot be reconciled to net income due to the inherent difficulty in quantifying certain amounts that are necessary for such reconciliation at the plant level, including adjustments that could be made for interest expense (net), provision for (benefit from) income taxes and depreciation & amortization, the amounts of which, based on historical experience, could be significant.

Free cash flow - Net cash provided by operating activities minus capital expenditures. This measure is commonly used by investors to evaluate liquidity. We believe that free cash flow provides useful information to management and other parties with an important perspective on the cash available for shareholders, debt repayment and acquisitions after making capital investments.

Appendix

Information related to financial measures

Recurring annual EBITDA for the Value Enhancement Program (VEP) – Year-end EBITDA run-rate based on 2017-2019 mid-cycle margins and modest inflation relative to a 2021 baseline. Recurring annual EBITDA for individual projects cannot be reconciled to net income due to the inherent difficulty in quantifying certain amounts that are necessary for such reconciliation at the project level, including adjustments that could be made for provision for (benefit from) income taxes and depreciation & amortization, the amounts of which, based on historical experience, could be significant. We believe recurring annual EBITDA is useful to investors because it represents a key measure used by management to assess progress towards our strategy of value creation.

We also present EBITDA, net income and EPS exclusive of identified items. Identified items include adjustments for "lower of cost or market" ("LCM"), impairments and refinery exit costs. Our inventories are stated at the lower of cost or market. Cost is determined using the last-in, first-out ("LIFO") inventory valuation methodology, which means that the most recently incurred costs are charged to cost of sales and inventories are valued at the earliest acquisition costs. Fluctuation in the prices of crude oil, natural gas and correlated products from period to period may result in the recognition of charges to adjust the value of inventory to the lower of cost or market in periods of falling prices and the reversal of those charges in subsequent interim periods, within the same fiscal year as the charge, as market prices recover. Property, plant and equipment are recorded at historical costs. If it is determined that an asset or asset group's undiscounted future cash flows will not be sufficient to recover the carrying amount, an impairment charge is recognized to write the asset down to its estimated fair value. Goodwill is tested for impairment annually in the fourth quarter or whenever events or changes in circumstances indicate that the fair value of a reporting unit with goodwill is below its carrying amount. If it is determined that the carrying value of the reporting unit including goodwill exceeds its fair value, an impairment charge is recognized. We assess our equity investments for impairment whenever events or changes in circumstances indicate that the carrying amount of the investment may not be recoverable. If the decline in value is considered to be other-than-temporary, the investment is written down to its estimated fair value. In April 2022 we announced our decision to cease operation of our Houston Refinery. In connection with exiting the refinery business, we began to incur costs primarily consisting of accelerated lease amortization costs, personnel related costs, accretion of asset retirement obligations and depreciation of asset retirement cost.

These measures as presented herein, may not be comparable to similarly titled measures reported by other companies due to differences in the way the measures are calculated.

Appendix

Non-GAAP reconciliation

Reconciliation of Net Income to Recurring Annual EBITDA for the Value Enhancement Program

Millions of dollars	Original Target 2023[b]	Unlocked Value 2023[c]	Current Target 2024	Current Target 2025
Net income[a]	$ 115	$ 300	$ 445	$ 750
Provision for income taxes	25	75	110	185
Depreciation and amortization	10	25	45	65
Interest expense, net	—	—	—	—
Recurring annual EBITDA[a]	$ 150	$ 400	$ 600	$ 1,000

(a) Year-end run rate based on 2017-2019 mid-cycle margins and modest inflation relative to 2021 baseline.

(b) In 2022, we launched the Value Enhancement Program initially targeting $150 million in recurring annual EBITDA by the end of 2023.

(c) In 2023, the program delivered a year-end run rate of approximately $400 million of recurring annual EBITDA.

Reconciliations of Net Income to Net Income Excluding Identified Items and to EBITDA Including and Excluding Identified Items

Millions of dollars	Year Ended December 31, 2019	2020	2021	2022	2023
Net income					$ 2,121
add: Identified items					
Impairments, pre-tax[a]					518
Refinery exit costs, pre-tax[b]					334
Benefit from income taxes related to identified items					(135)
Net income excluding identified items					$ 2,838
Net income	$ 3,397	$ 1,427	$ 5,617	$ 3,889	$ 2,121
Loss from discontinued operations, net of tax	7	2	6	5	5
Income from continuing operations	3,404	1,429	5,623	3,894	2,126
Provision for (benefit from) income taxes	648	(43)	1,163	882	501
Depreciation and amortization[c]	1,312	1,385	1,393	1,267	1,534
Interest expense, net	328	514	510	258	348
EBITDA	5,692	3,285	8,689	6,301	4,509
add: Identified items					
LCM charges	33	16	—	—	—
Impairments[a]	—	582	624	69	518
Refinery exit costs[d]	—	—	—	157	195
EBITDA excluding identified items	$ 5,725	$ 3,883	$ 9,313	$ 6,527	$ 5,222

(a) Reflects non-cash impairment charges related to our Houston refinery, recognized in 2020 and 2021, non-cash impairment charges related to the sale of our polypropylene manufacturing facility in Australia, recognized in 2022, and non-cash impairment charges of $518 million recognized in 2023, which includes a non-cash goodwill impairment charge of $252 million in our Advanced Polymer Solutions segment and $192 million related to Dutch PO/SM joint venture assets in our Intermediates & Derivatives segment.

(b) Refinery exit costs include accelerated lease amortization costs, personnel related costs, accretion of asset retirement obligations and depreciation of asset retirement costs, recognized in 2022 and 2023. See Refinery Exit Costs table for additional detail.

(c) Depreciation and amortization includes depreciation of asset retirement costs in connection with exiting the Refining business, recognized in 2022 and 2023. See Refinery Exit Costs table for additional detail.

(d) Refinery exit costs include accelerated lease amortization costs, personnel related costs and accretion of asset retirement obligations, recognized in 2022 and 2023. See Refinery Exit Costs table for additional detail.

Appendix

Non-GAAP reconciliation

Reconciliation of Diluted EPS to Diluted EPS Excluding Identified Items

	Year Ended, December 31, 2023
Diluted earnings per share	$ 6.46
Identified items	
add: Impairments	1.41
add: Refinery exit costs	0.78
Diluted earnings per share excluding identified items	$ 8.65

Calculation of Cash Conversion

	Year Ended December 31,				
Millions of dollars	2019	2020	2021	2022	2023
Net cash provided by operating activities	$ 4,961	$ 3,404	$ 7,695	$ 6,119	$ 4,942
divided by:					
EBITDA excluding LCM and impairments[a]	$ 5,725	$ 3,883	$ 9,313	$ 6,370	$ 5,027
Cash conversion	87 %	88 %	83 %	96 %	98 %

(a) See Reconciliation of net cash provided by operating activities to EBITDA including and excluding LCM and impairments.

Reconciliation of Net Cash Provided by Operating Activities to EBITDA Including and Excluding LCM and Impairments

	Year Ended December 31,				
Millions of dollars	2019	2020	2021	2022	2023
Net cash provided by operating activities	$ 4,961	$ 3,404	$ 7,695	$ 6,119	$ 4,942
Adjustments:					
Depreciation and amortization[a]	(1,312)	(1,385)	(1,393)	(1,267)	(1,534)
Impairments[b]	—	(582)	(624)	(69)	(518)
Amortization of debt-related costs	(11)	(21)	(35)	(14)	(9)
Share-based compensation	(48)	(55)	(66)	(70)	(91)
Inventory valuation charges	(33)	(16)	—	—	—
Equity (loss) income, net of distributions of earnings	(22)	97	146	(344)	(189)
Deferred income tax (provision) benefit	(209)	(331)	198	(369)	(43)
Changes in assets and liabilities that (provided) used cash:					
Accounts receivable	(367)	246	1,519	(1,005)	(110)
Inventories	129	(340)	742	91	(18)
Accounts payable	251	(217)	(1,301)	464	(141)
Other, net	58	627	(1,264)	353	(168)
Net income	3,397	1,427	5,617	3,889	2,121
Loss from discontinued operations, net of tax	7	2	6	5	5
Income from continuing operations	3,404	1,429	5,623	3,894	2,126
Provision for (benefit from) income taxes	648	(43)	1,163	882	501
Depreciation and amortization[a]	1,312	1,385	1,393	1,267	1,534
Interest expense, net	328	514	510	258	348
EBITDA	5,692	3,285	8,689	6,301	4,509
add: LCM charges	33	16	—	—	—
add: Impairments[b]	—	582	624	69	518
EBITDA excluding LCM and impairments	$ 5,725	$ 3,883	$ 9,313	$ 6,370	$ 5,027

(a) Depreciation and amortization includes depreciation of asset retirement costs in connection with exiting the Refining business, recognized in 2022 and 2023. See Refinery Exit Costs table for additional detail.

(b) Reflects non-cash impairment charges related to our Houston refinery, recognized in 2020 and 2021, non-cash impairment charges related to the sale of our polypropylene manufacturing facility in Australia, recognized in 2022, and non-cash impairment charges of $518 million recognized in 2023, which includes a non-cash goodwill impairment charge of $252 million in our Advanced Polymer Solutions segment and $192 million related to Dutch PO/SM joint venture assets in our Intermediates & Derivatives segment.

(c) Refinery exit costs include accelerated lease amortization costs, personnel related costs and accretion of asset retirement obligations, recognized in 2022 and 2023. See Refinery Exit Costs table for additional detail.

Appendix

Non-GAAP reconciliation

Reconciliation of Net Cash Provided by Operating Activities to Free Cash Flow

Millions of dollars	Year Ended December 31, 2023
Net cash provided by operating activities	$ 4,942
less:	
Capital expenditures	1,531
Free cash flow	$ 3,411

Calculation of Dividend Yield

Millions of dollars	Year Ended December 31, 2023
Dividend per ordinary share	$ 4.94
divided by:	
Closing share price, end of period	95.08
Dividend yield	5.2%

Refinery Exit Costs

Millions of dollars	Year Ended December 31, 2022	2023
Refinery exit costs:		
Accelerated lease amortization costs	$ 91	$ 110
Personnel costs	64	76
Asset retirement obligation accretion	2	9
Asset retirement cost depreciation	30	139
Total refinery exit costs	$ 187	$ 334

Reconciliation of NATPET Net Income to EBITDA

Millions of dollars	Year Ended December 31, 2018	2019	2020	2021	2022	5 Year Average
Net income	$ 56	$ 101	$ 110	$ 138	$ 70	$ 95
Provision for income taxes	4	4	3	5	6	4
Depreciation and amortization	56	46	55	51	46	51
Interest expense, net	8	6	5	2	2	5
Recurring annual EBITDA	$ 124	$ 157	$ 173	$ 196	$ 124	$ 155

Note: EBITDA for NATPET was calculated based on financial information provided by Alujain Corporation and prepared in accordance with International Financial Reporting Standards (IFRS). Amounts were converted to USD using an average rate of 3.75 SAR to 1 USD.

About us

We are LyondellBasell (“LYB”) – a leader in the global chemical industry creating solutions for everyday sustainable living. Through advanced technology and focused investments, we are enabling a circular and low carbon economy. Across all we do, we aim to unlock value for our customers, investors and society. As one of the world’s largest producers of polymers and a leader in polyolefin technologies, we develop, manufacture and market high-quality and innovative products for applications ranging from sustainable transportation and food safety to clean water and quality healthcare. For more information, please visit www.lyb.com or follow @LyondellBasell on LinkedIn.